

WALWORTH MFG. CO.  
CATALOGUE  
1878.














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ILLUSTRATED CATALOGUE

OF

Wrought and Cast Iron Pipe,

STEAM AND GAS PIPE FITTINGS,

BRASS AND IRON STEAM VALVES AND COCKS,

TOOLS, SUPPLIES,

AND OTHER ARTICLES INCIDENTAL TO

Steam and Gas Engineering,

AND

HOT WATER AND STEAM HEATING,

MANUFACTURED BY THE

WALWORTH MANUFACTURING COMPANY,

No. 69 KILBY STREET,

BOSTON.

---

BOSTON :

GUNN, BLISS & CO., PRINTERS, 31 HAWLEY STREET.

1878.

75  
432  
113

## PREFACE.

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WE beg to present to our friends and the public a new Illustrated Catalogue of the various descriptions of Goods manufactured and sold by us.

An experience of thirty-six years in our business, and unrivalled facilities for manufacturing, enable us to offer our customers Goods of superior style and quality, and to give mature and judicious Engineering and Mechanical advice (for which we make no charge) in the planning and execution of work.

Having Iron and Brass Foundries of our own, in connection with our Machine Shops, we claim to have facilities for executing all kinds of Work, unsurpassed by those of any other establishment in the country.

We would call the attention of our friends to the fact that we are the originators of the plan of WARMING BUILDINGS, DRYING ROOMS, ETC., BY STEAM, through the use of WROUGHT IRON PIPES. Our experience in this department has enabled us to bring our apparatus to a high state of perfection. We have applied this mode of warming to more than four thousand buildings, and with uniform success.

It is our purpose to spare no exertion to maintain our reputation, and to continue to deserve the approbation of our customers.

The following List is a Catalogue of our manufactured articles. We are also prepared to furnish any article in our line, either of Iron or Brass, of any peculiar shape or design, and respectfully solicit such orders.

WALWORTH MANUFACTURING CO.

J. J. WALWORTH, *President.*

C. C. WALWORTH, *Vice-President.*

E. C. HAMMER, *Treasurer.*

BOSTON, May 1, 1878.

111710

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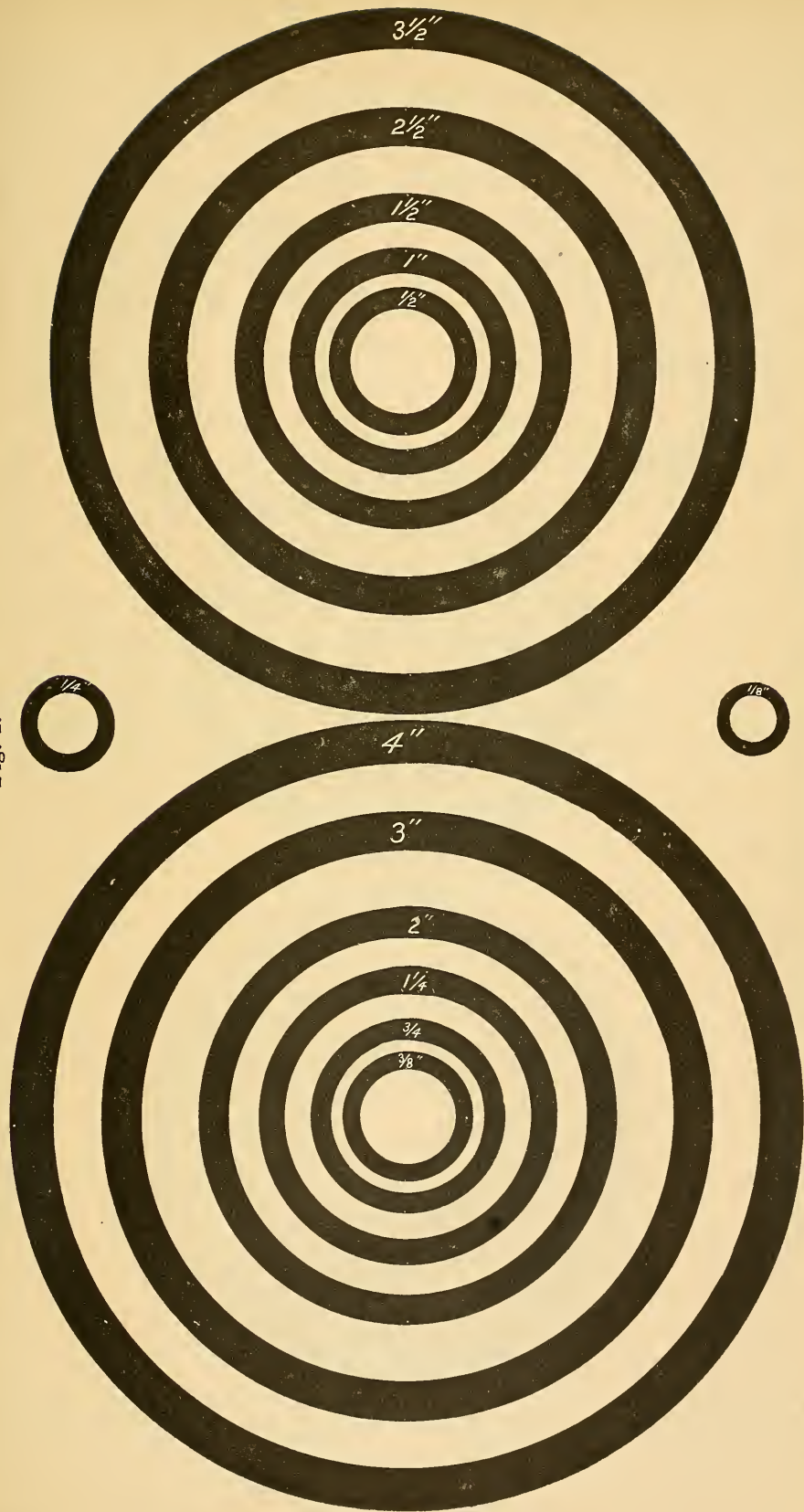
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WROUGHT IRON WELDED TUBES. STANDARD SIZES.

Fig. 1.



SHOWING INSIDE AND OUTSIDE DIAMETER.

EXTRA STRONG  
WROUGHT IRON WELDED TUBES.  
STANDARD SIZES.

$\frac{3}{8}$  EXTRA STRONG.



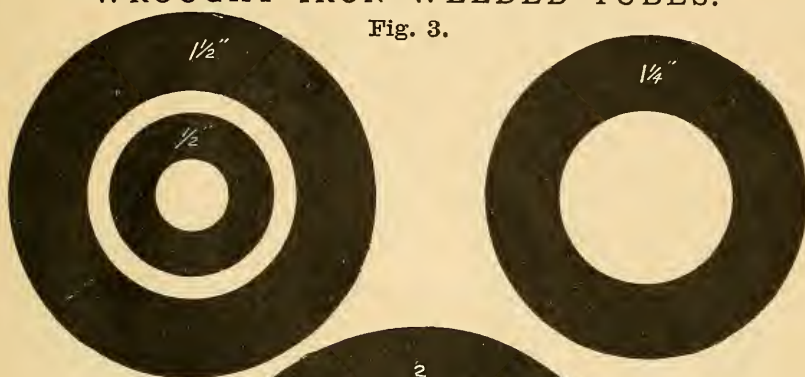
Fig. 2.

$\frac{1}{8}$  EXTRA STRONG.



DOUBLE EXTRA STRONG  
WROUGHT IRON WELDED TUBES.

Fig. 3.



Hydraulic Pipe.

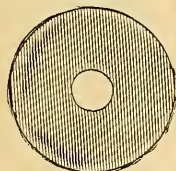
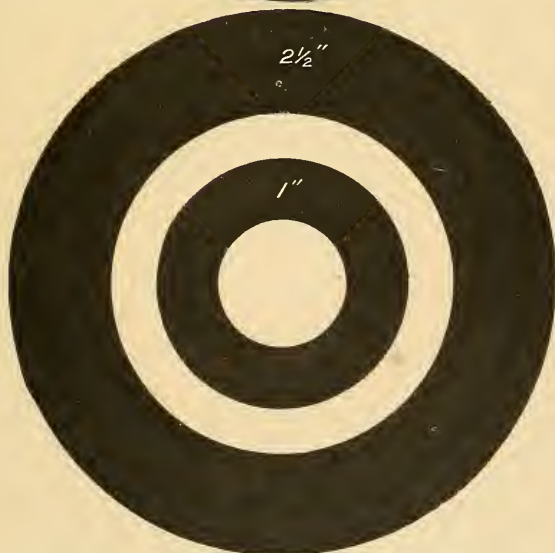


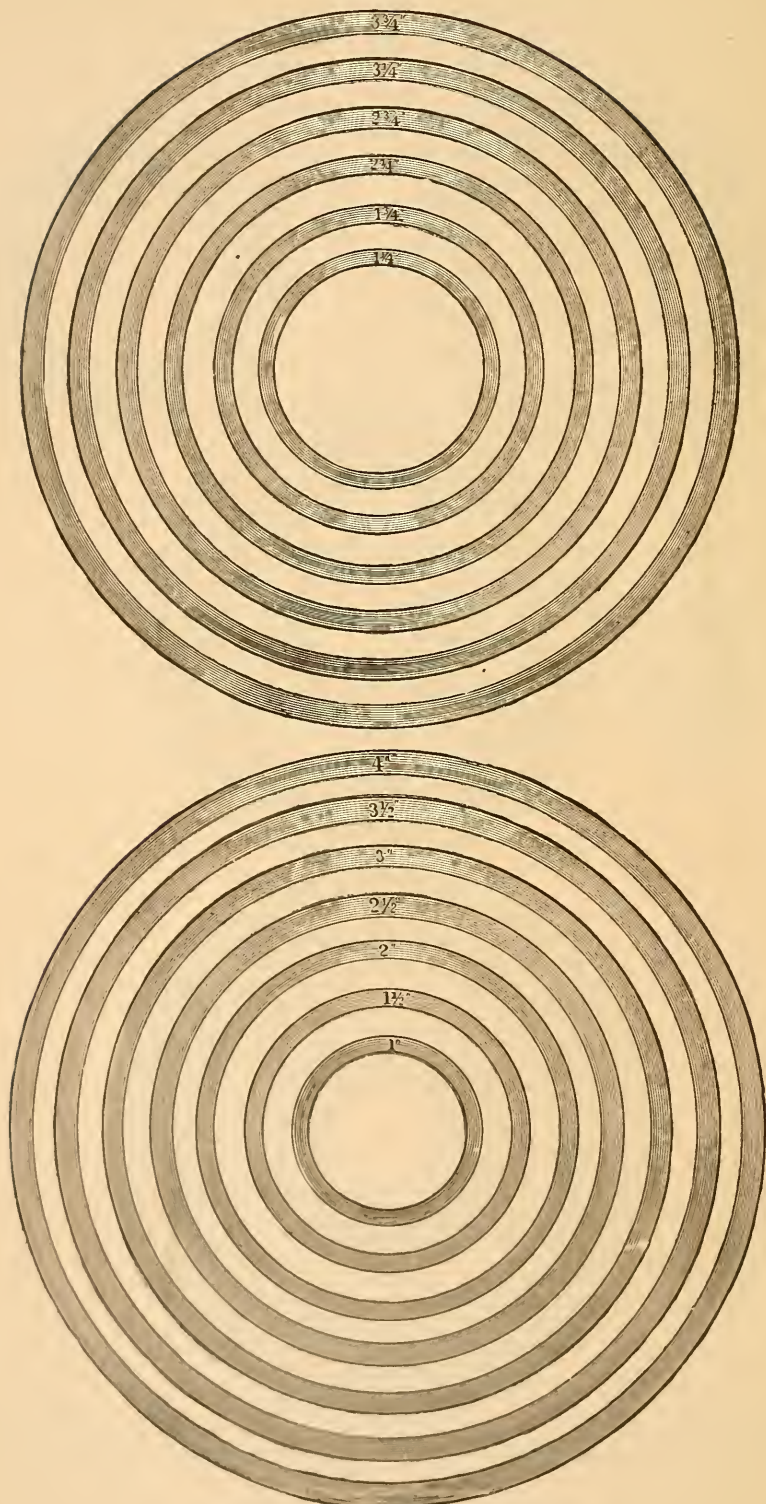
Fig. 4.





# BOILER FLUES.

Fig. 5.



Showing the inside and outside diameter.



# FITTINGS FOR WROUGHT IRON PIPE.

## ELBOWS.

Fig. 6.



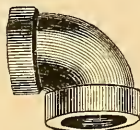
Mall. Steam.

Fig. 7.



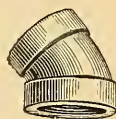
Mall. Gas.

Fig. 8.



Cast Iron.

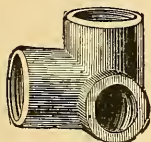
Fig. 9.



45°

## TEES.

Fig. 10.



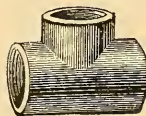
Side Outlet.

Fig. 11.



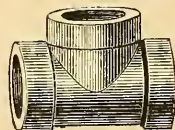
Mall. Steam.

Fig. 12.



Mall. Gas.

Fig. 13.



Cast Iron.

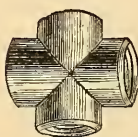
## CROSSES.

Fig. 14.



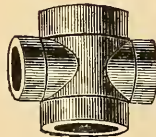
Mall. Steam.

Fig. 15.



Mall. Gas.

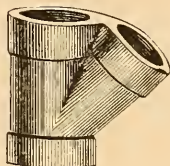
Fig. 16.



Cast Iron.

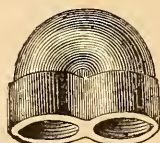
## Y or LATERAL BRANCH.

Fig. 17.



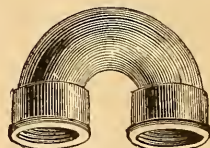
## RETURN BENDS.

Fig. 18.



Close.

Fig. 19.



Open.

## BUSHINGS.

Fig. 20.



Fig. 21.



## NIPPLES.

Fig. 22.



Short.

Fig. 23.



Long.

R. & L.  
COUPLINGS.

Fig. 24.

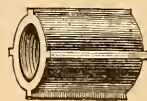
REDUCING  
COUPLINGS.

Fig. 25.

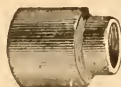
R. Hand  
COUPLINGS.

Fig. 26.



## CAPS.

Fig. 27.



## PLUGS.

Fig. 28.



## LOCKNUTS.

Fig. 29.



## W. I. HOOKS.

Fig. 30.



# STRAPS.

## SHEET IRON, TINNED.

Fig. 32.



### Malleable Iron, Tinned.

Fig. 31.



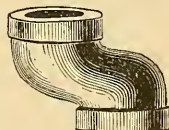
### Short Shank Hooks

Fig. 34.



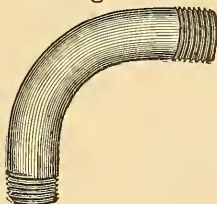
### Offsets.

Fig. 33.



### Service Bends

Fig. 36.



$\frac{1}{4}$  Turn.

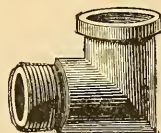
### Beam Hooks.

Fig. 35.



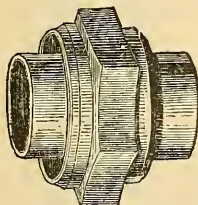
### Street Elbows.

Fig. 37.



### Malleable Iron Unions.

Fig. 38.



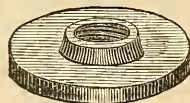
### Flange Unions. With Bolts and Nuts.

Fig. 39.



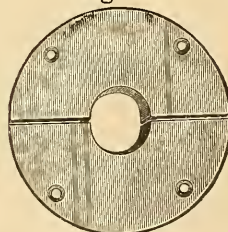
### Flanges.

Fig. 40.



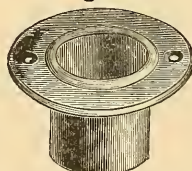
### Floor Flanges, IN HALVES.

Fig. 43.



### Floor Flanges, WHOLE.

Fig. 42.



### Flange Curved.

Fig. 41.



## BRANCH TEES.

Fig. 44.



## HOOK PLATES.

Fig. 45.



## EXPANSION PLATES.

Fig. 46.



## RING PLATES.

Fig. 47.



## COIL STAND.

Fig. 48.

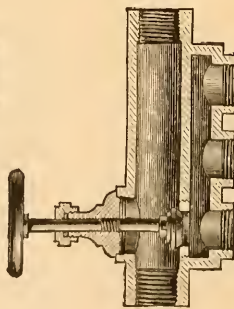
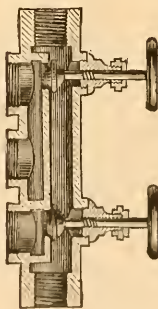
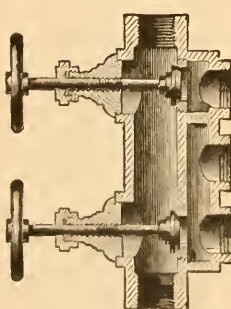
C. C. WALWORTH'S PATENT MANIFOLD,  
Or BRANCH TEE.

Fig. 49.

Fig. 50.

Fig. 51.

Fig. 52.



Nos. 1 &amp; 2, Supply.

Nos. 4 &amp; 5, Return.

No. 3, Supply.

No. 6, Return.

This improvement combines the Main Pipe, Manifold and Valve in *one fitting*, dispensing with several fittings and the necessary joints and labor.

It is very easily repaired, and has the advantage of controlling the circulation through a portion or all of the radiating pipes, as the temperature may require.



# IRON STEAM COCKS.

Fig. 53.

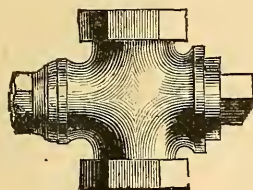
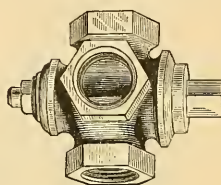


Fig. 54.



Three Way.

## STEAM VALVES, IRON BODIES, BRASS MOUNTED.

### GLOBE AND ANGLE VALVES.—Screwed.

Fig. 55.

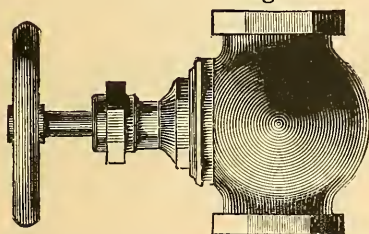


Fig. 56.

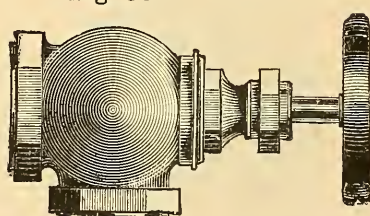
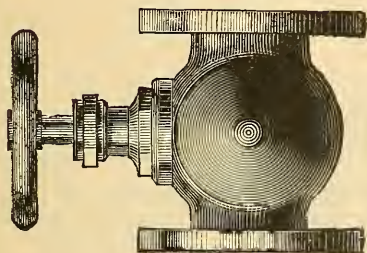


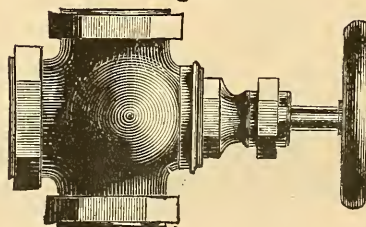
Fig. 57.



FLANGED.

CROSS VALVE.

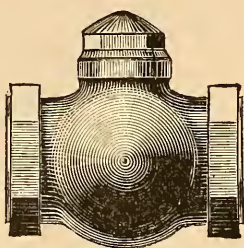
Fig. 58.





## IRON CHECK VALVES.

Fig. 59.



## SAFETY VALVES.

Fig. 60.

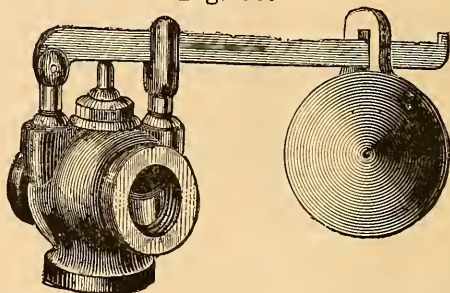
BACK  
PRESSURE VALVES.

Fig. 61.

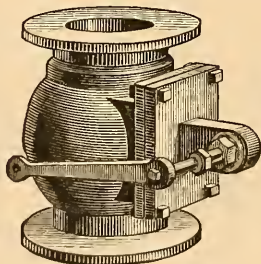
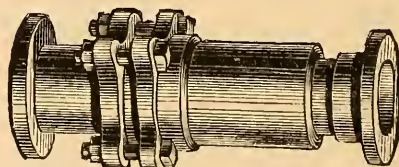
IRON  
EXPANSION JOINTS.

Fig. 62.



FLANGED.

## FOOT VALVES.

Fig. 63.

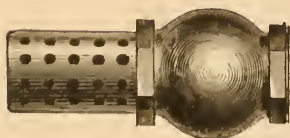


Fig. 64.

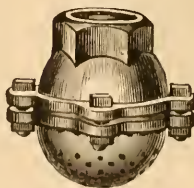
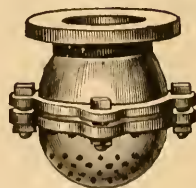
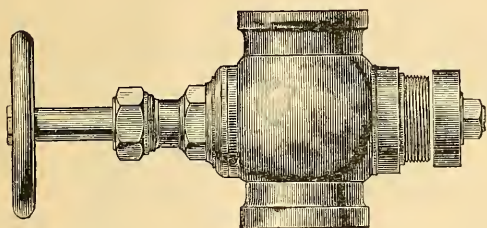


Fig. 65.



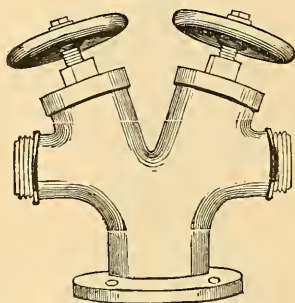
HYDRANT GLOBE VALVES.

Fig. 66.



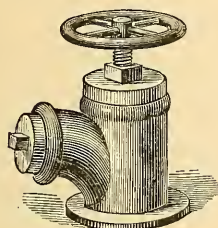
DOUBLE VALVE HYDRANT.

Fig. 67.



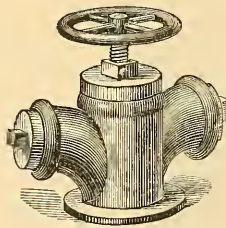
HYDRANTS.

Fig. 68.



2½ Single Outlet.

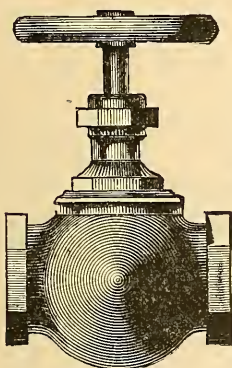
Fig. 69.



2½ Double Outlet.

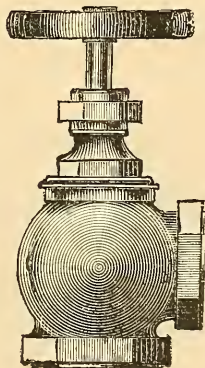
BRASS GLOBE and ANGLE VALVES.

Fig. 70.



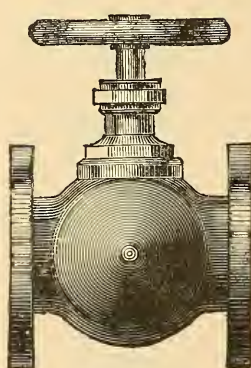
Globe.

Fig. 71.



Angle.

Fig. 72.

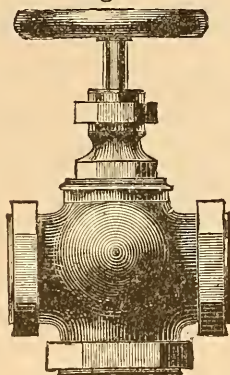


Globe Flanged.

## BRASS VALVES, COCKS, &amp;c.

## CROSS VALVES.

Fig. 73.



## GLOBE CHECK. UPRIGHT CHECK.

Fig. 74.

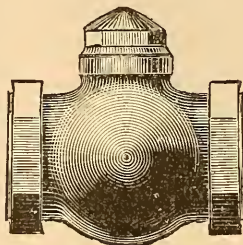
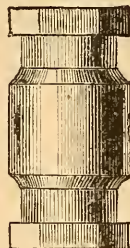


Fig. 75.



## ANGLE CHECK. REGULATOR. VACUUM VALVES.

Fig. 76.

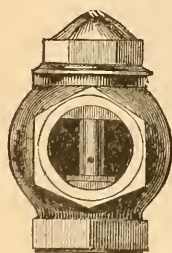
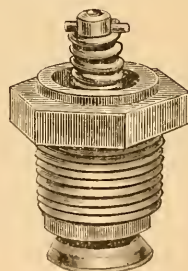


Fig. 77.



Fig. 78.



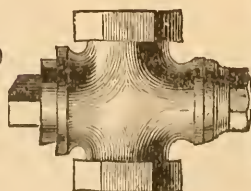
## SAFETY VALVES.

Fig. 79.



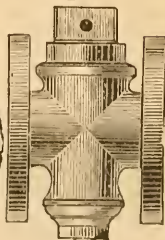
## BRASS STEAM COCKS.

Fig. 80.



Screwed.

Fig. 81.

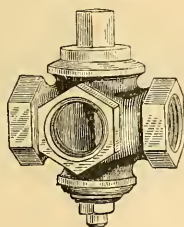


Flanged.



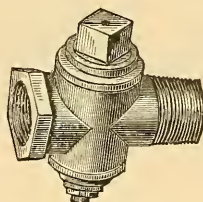
### Three-Way Cocks.

Fig. 82.



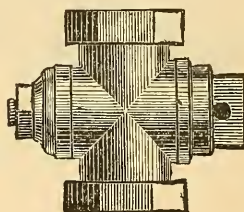
### Brass Gas Cocks.

Fig. 83.



Male and Female.

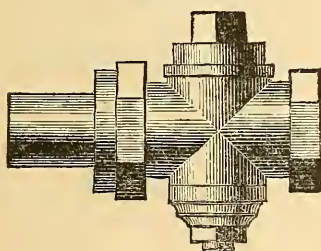
Fig. 84.



Female.

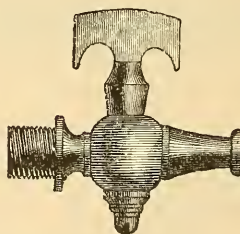
### Union Gas Cocks.

Fig. 85.



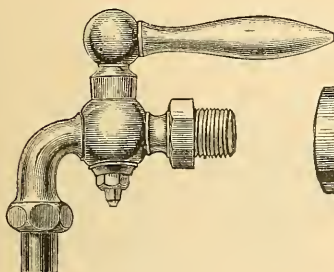
### Brass Air Cocks.

Fig. 86.



### UNION Cylinder Cocks.

Fig. 87.



### Union Joints. Soldering Unions.

Fig. 88.

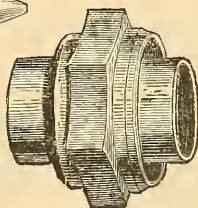
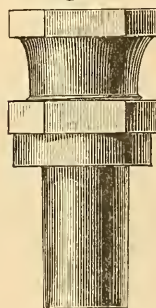


Fig. 89.



## SOLDERING NIPPLES.

Fig. 90.

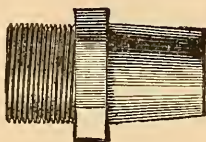
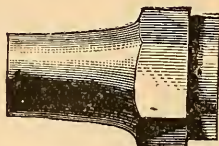


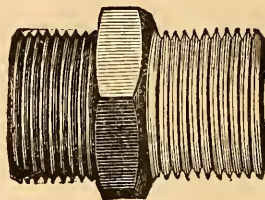
Fig. 91.



Female.

## HOSE NIPPLES.

Fig. 92.



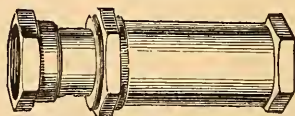
## HOSE COUPLINGS.

Fig. 93.



## EXPANSION JOINTS.

Fig. 94.



## BRASS CAPS.

Fig. 95.



## PLUGS.

Fig. 96.



## COUPLINGS.

Fig. 97.



## NIPPLES.

Fig. 98.



## BUSHINGS.

Fig. 99.



## LOCKNUTS.

Fig. 100.



## ELBOWS.

Fig. 101.



## TEES.

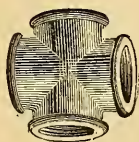
Fig. 102.





CROSS.

Fig. 103.



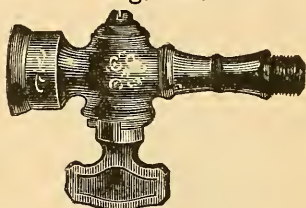
RETURN BEND.

Fig. 104.



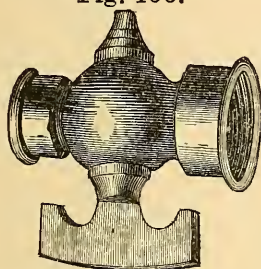
PILLAR COCK.

Fig. 105.



LAMP POST COCKS.

Fig. 106.



PENDANT COCKS.

Fig. 107.

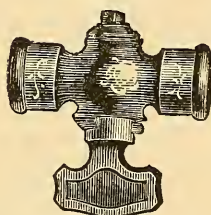
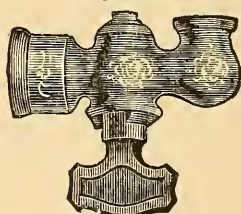


Fig. 108.



SWING JOINTS,  
WITH COCK.

UNIV. SWING JOINTS.

Fig. 110.

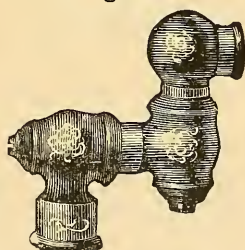
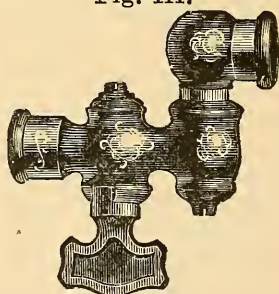
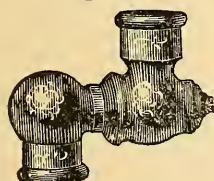


Fig. 111.



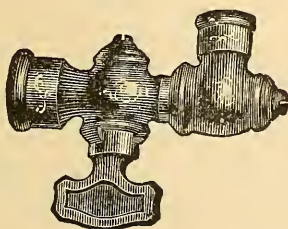
SWING JOINTS.

Fig. 109.



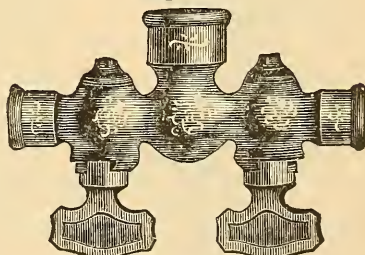
SWING PENDANT COCKS.

Fig. 112.



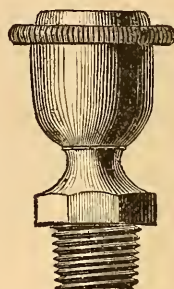
DOUBLE CENTRES.

Fig. 113.



## PLAIN OIL CUP.

Fig. 116.

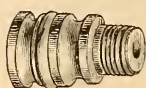


## BALL NOZZLE. STRAIGHT NOZZLE.

Fig. 114.

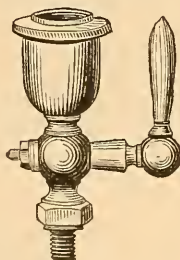


Fig. 115.



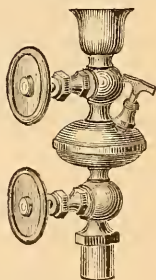
## OIL CUP, with Cock.

Fig. 117.



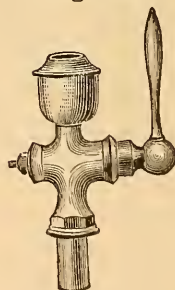
## DOUBLE OIL VALVE.

Fig. 118.



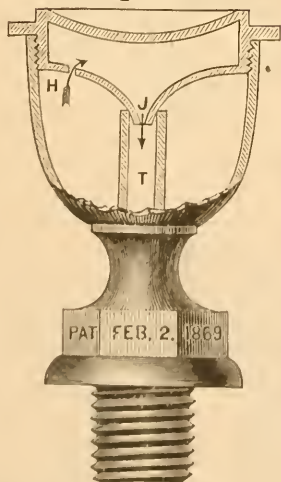
## HOLLOW PLUG OIL COCK.

Fig. 119.



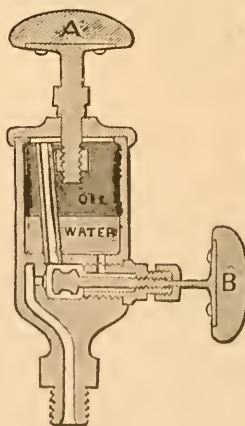
## EXCELSIOR OIL CUP.

Fig. 120.



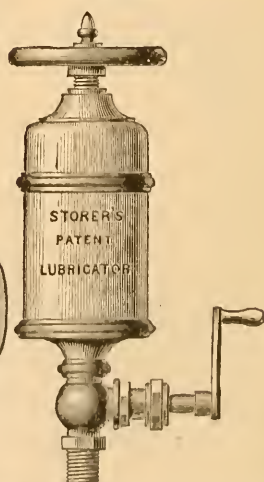
## ROSS' LUBRICATOR.

Fig. 121.



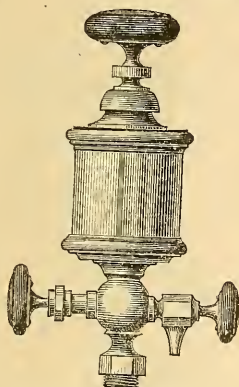
## STORER'S LUBRICATOR.

Fig. 122.

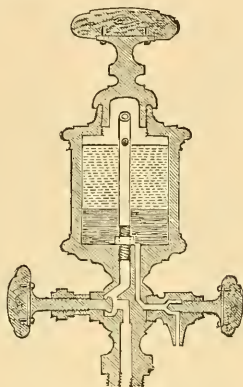


# NATHAN & DREYFUS' LUBRICATORS.

Fig. 123.

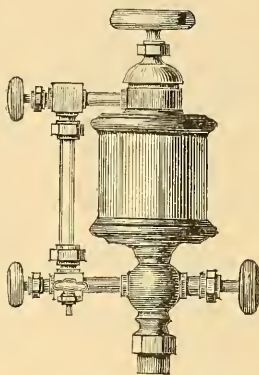


Plain, without Yoke.



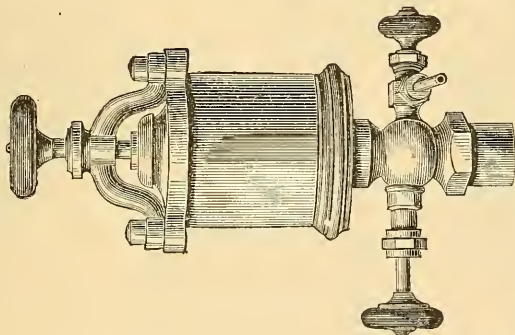
Interior View.

Fig. 124.



With Glass Indicator.

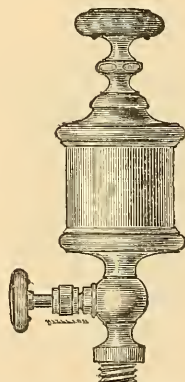
Fig. 125.



With Yoke.

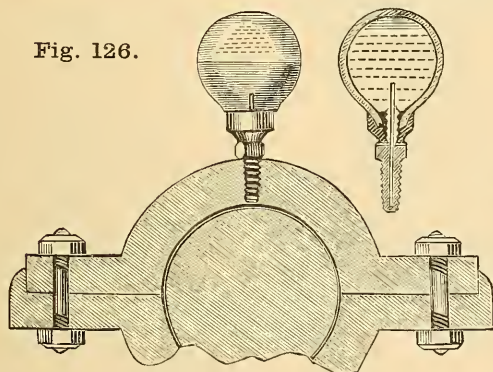
## COMMON LUBRICATOR.

Fig. 127.



## TAYLOR'S PATENT SELF-OILER.

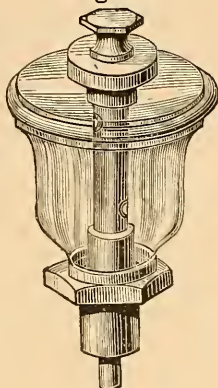
Fig. 126.





## DREYFUS' PATENT SELF OILERS.

Fig. 128.



Nos. 24 and 26.

Fig. 132.

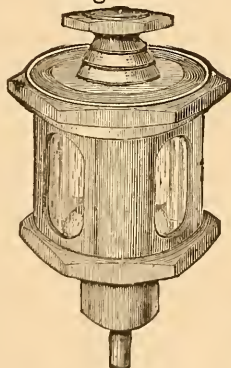
No. 42.  
No. 20 to 100, Shell Cased.

Fig. 134.

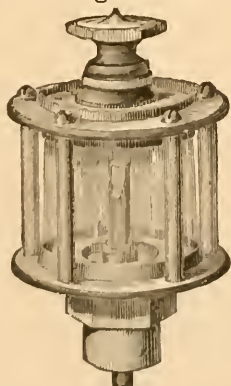
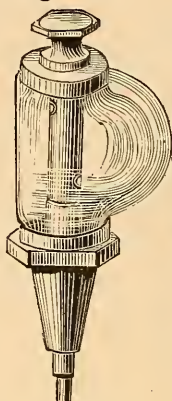
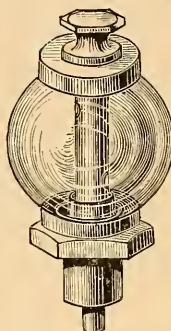
No. 60.  
No. 30 to 150, Skeleton.

Fig. 129.



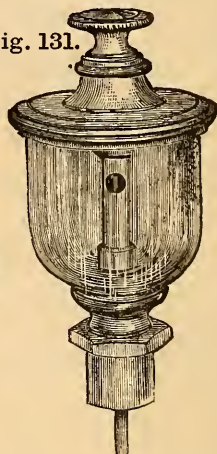
No. 13. W. B.

Fig. 130.



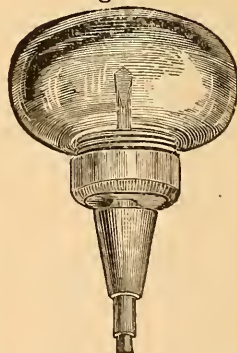
Nos. 15 and 22.

Fig. 131.



A to D.

Fig. 133.



No. 9.

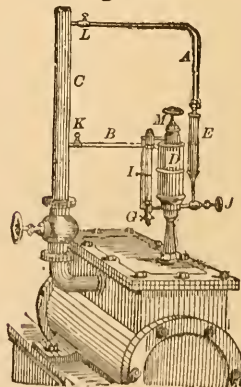
Siebert's Lubricator.  
Fig. 136.

Fig. 135.

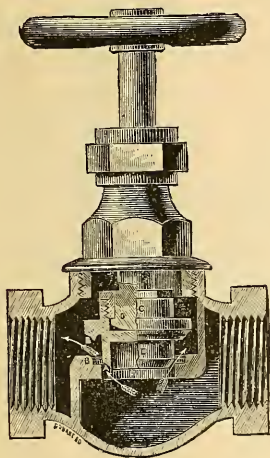


No. 10.

# PATENT VALVES.

## LOCKE'S PATENT.

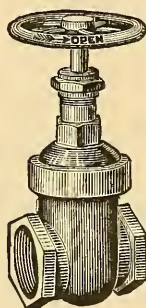
Fig. 137.



## LUDLOW'S PATENT.

(BRASS.)

Fig. 138.



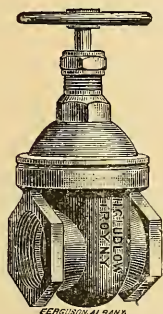
## LUDLOW'S PATENT SLIDING STOP VALVES.

(IRON.)

### NEW STYLE.

Fig. 139.

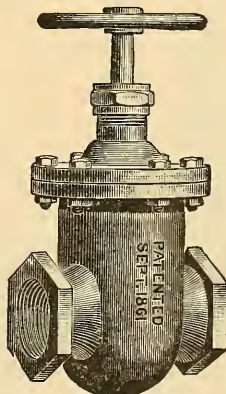
3 in. Screw Socket.  
Screw Top.



### OLD STYLE.

Fig. 140.

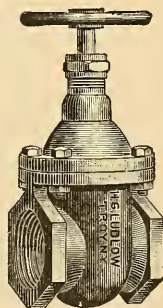
3 inch Screw Socket.



### NEW STYLE.

Fig. 141.

3 in. Screw Socket.  
Flange Top.



We make our Valves 1½ to 4 inch inclusive, New Style.



# LUDLOW'S PATENT SLIDING STOP VALVES.

Fig. 142.

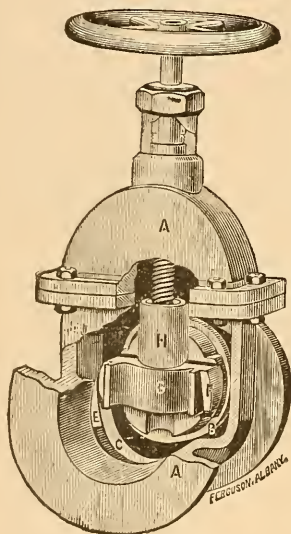


Fig. 143.

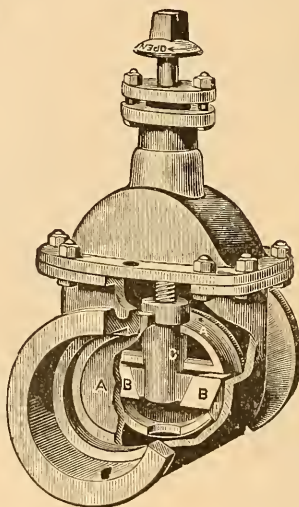
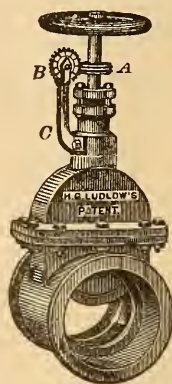


Fig. 144.



Iron Valves with In-  
dicator, showing  
position of  
Gate.

## QUICK MOVING SLIDE STEM AND LEVER VALVE.

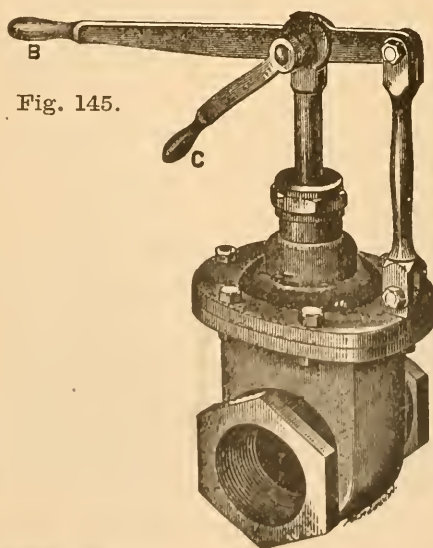
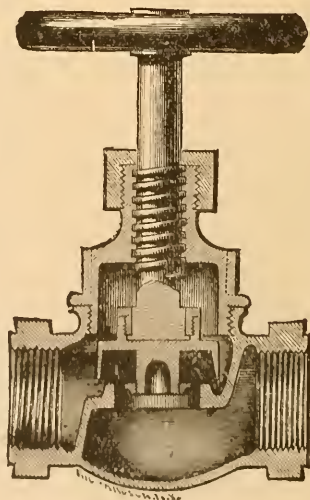


Fig. 145.

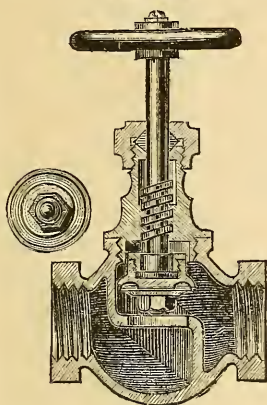
## JENKINS' PATENT.

Fig. 146.



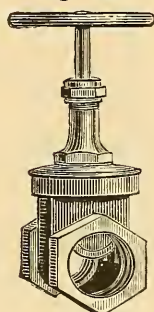
**FRINKS' PATENT.**

Fig. 147.



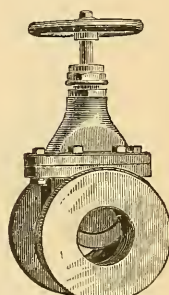
**PEET'S PATENT.**

Fig. 148.



BRASS.

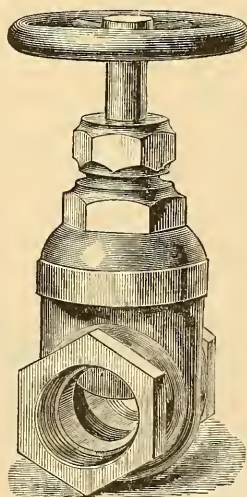
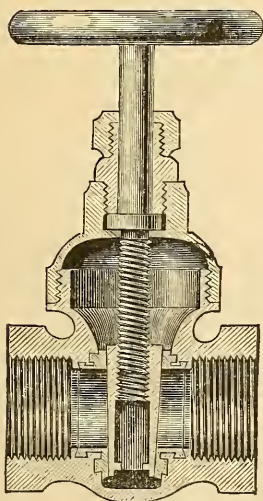
Fig. 149.



IRON.

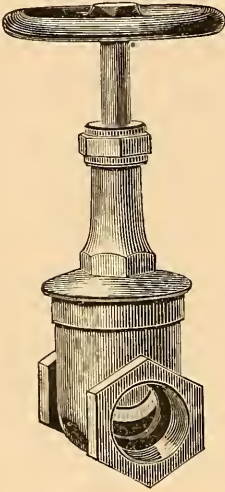
**CHAPMAN'S PATENT.**

Fig. 150.



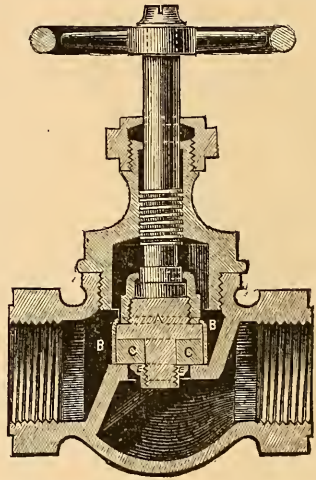
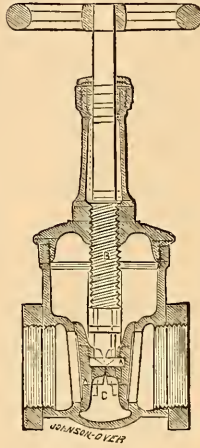
COFFIN'S PATENT.

Fig. 151.



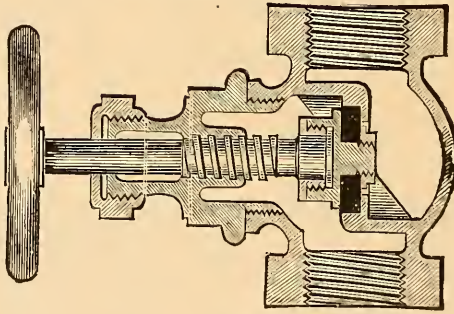
RUSSELL'S PATENT.

Fig. 152.



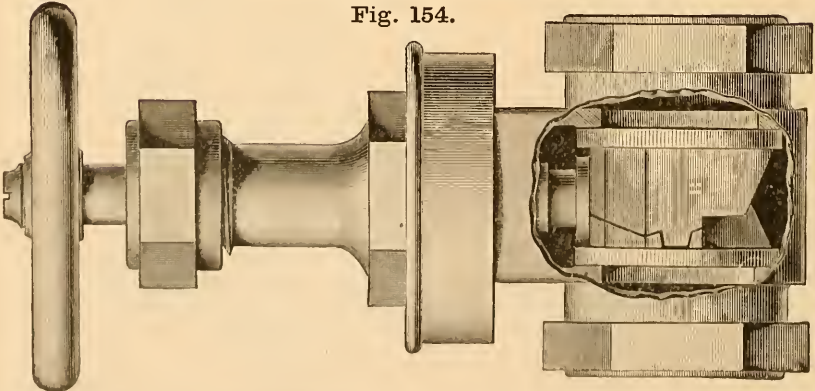
JOHNSON'S PATENT

Fig. 153.



RUSSELL GATE VALVE.

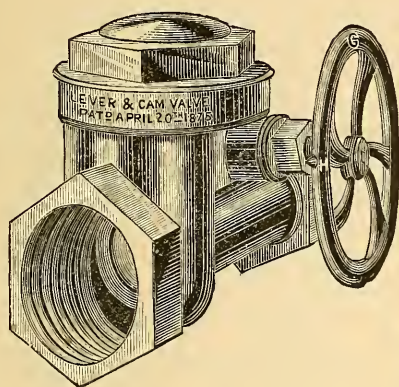
Fig. 154.





LEVER AND CAM VALVE.

Fig. 155.



RADIATOR VALVES.

Fig. 156.  
Wood Handle.

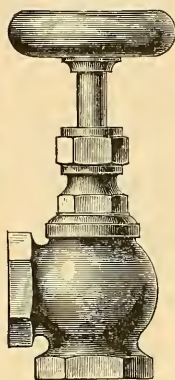
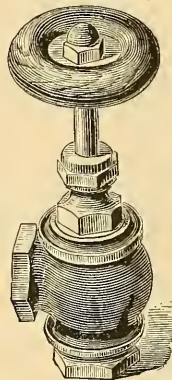


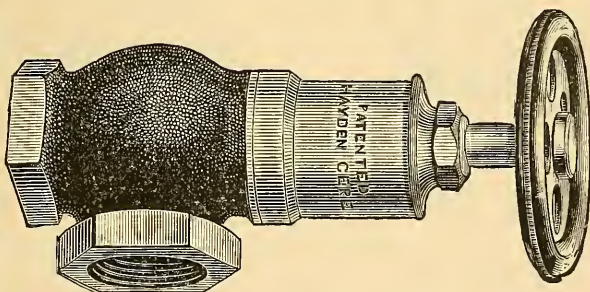
Fig. 157.  
Wood Handle.



(Patent applied for.)

With Frink Seats.

With or without Frink Seats.



FAXON'S PATENT.  
Fig. 158.

GAUGE COCKS.

Fig. 159.  
W. M. CO'S PATTER.

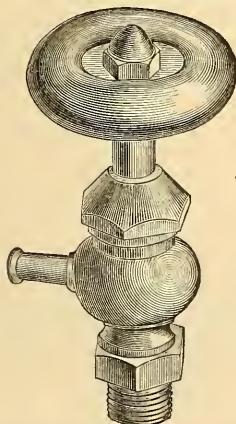
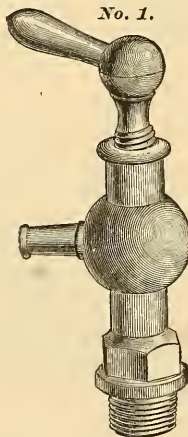


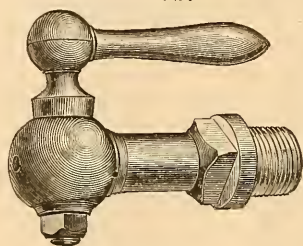
Fig. 160.  
No. 1.



## GAUGE COCKS.

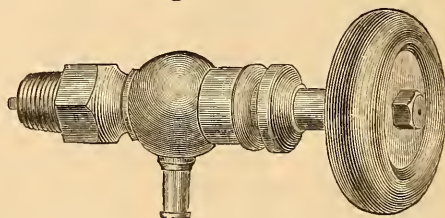
Fig. 161.

No. 2.



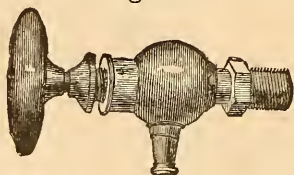
ASHCROFT'S SELF-CLEANING.

Fig. 162.



BISBEE'S PATENT.

Fig. 163.



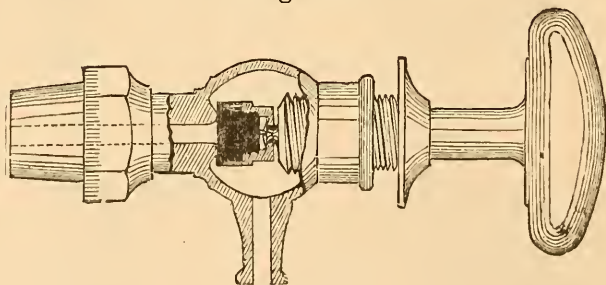
MISSISSIPPI.

Fig. 164.



JENKINS' PATENT.

Fig. 165.



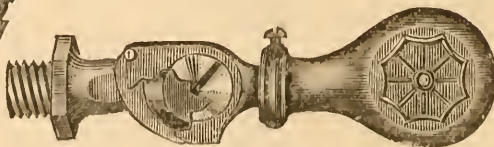
REGESETER'S PATENT.

WHEEL GAUGE COCK.

Fig. 166.



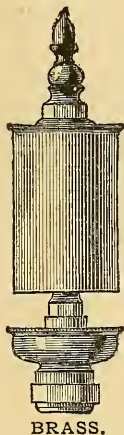
Fig. 167.





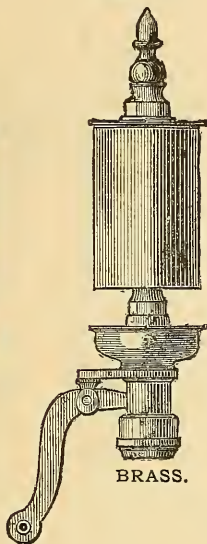
# STEAM WHISTLES.

Fig. 168.



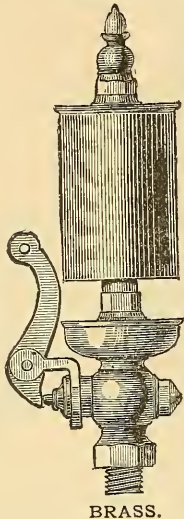
BRASS.

Fig. 169.



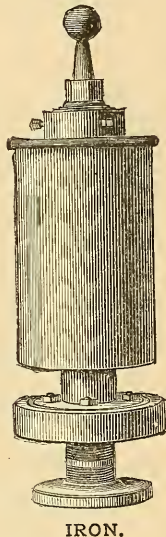
BRASS.

Fig. 170.



BRASS.

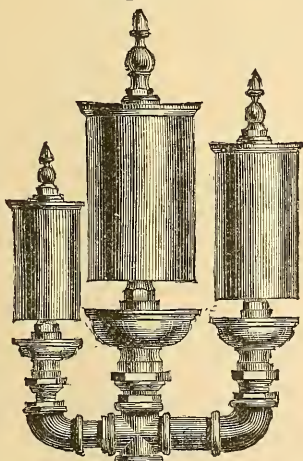
Fig. 171.



IRON.

## WHISTLE CHIMES.

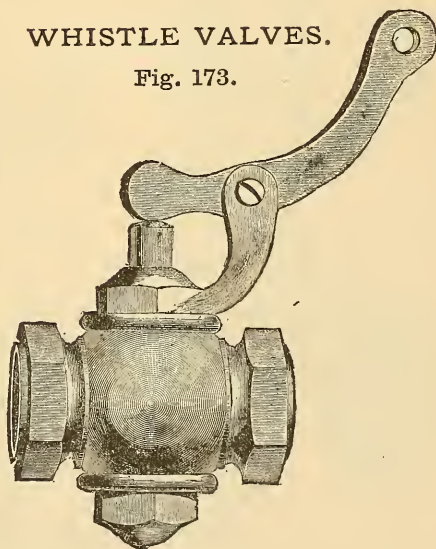
Fig. 172.



Three or more Whistles of any size, to order.

## WHISTLE VALVES.

Fig. 173.



# IMPROVED GLASS WATER GAUGES.

Fig. 174.



No. 1,  $\frac{1}{2}$ " Pipe,  $\frac{5}{8}$ " Glass.  
 " 2,  $\frac{1}{2}$ " "  $\frac{5}{8}$ " "  
 " 3,  $\frac{3}{4}$ " "  $\frac{3}{4}$ " "

WATER GAUGE BOX.

Fig. 176.

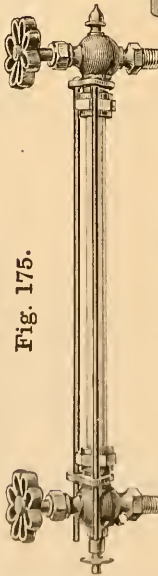
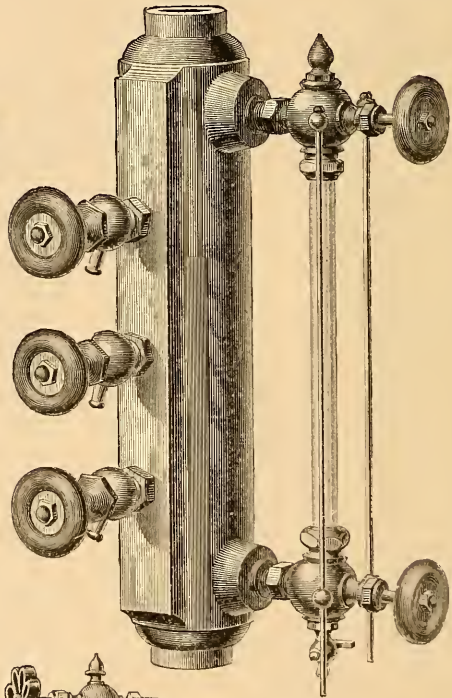


Fig. 175.

No. 0,  $\frac{1}{2}$ "  $\frac{5}{8}$ " Glass.

## SCOTCH GLASS TUBES.

Fig. 177.



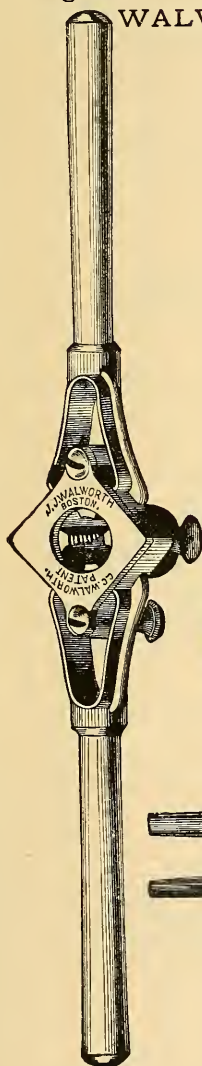
# GAS AND STEAM FITTERS' TOOLS.

Fig. 178.

WALWORTH'S PATENT SOLID DIE PLATES.

HILL'S PATENT SOLID DIE.

Fig. 179.



DIE FRAME.

Fig. 180.



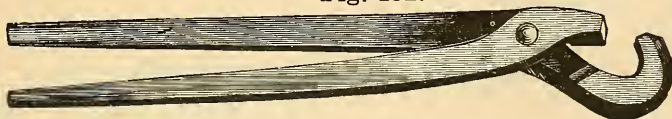
TAP.

Fig. 181.



COMMON PIPE TONGS.

Fig. 182.



DRILLS.

Fig. 183.





## REAMER.

Fig. 184.

GLEASON'S  
PATENT SCREWING STOCKS.

Fig. 185.

Cutting  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$  and  $\frac{7}{8}$  inch Brass Pipe.

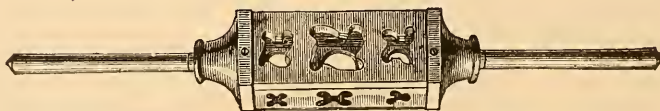
## SCREWING STOCK, SOLID PLATE AND DIES.

Fig. 186.

Complete, Cutting  $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{3}{8}$  and  $\frac{1}{2}$  inch Pipe.

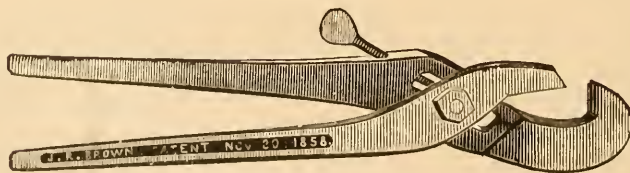
## DEAN'S PATENT STOCK.

Fig. 187.

Complete, Cutting  $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1 inch Pipe.

## BROWN'S PATENT PIPE TONGS.

Fig. 188.



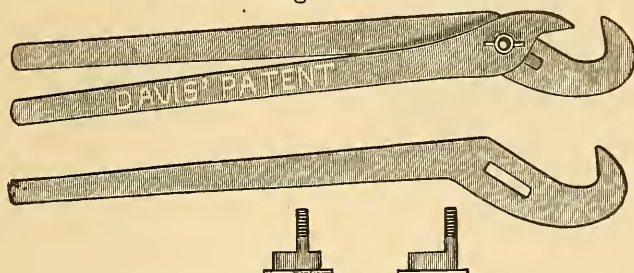
Patent extended Nov. 30, 1872.

No. 1,	for Pipe,	. . . . .	$\frac{1}{4}$ to $\frac{3}{4}$
" 1 $\frac{1}{2}$ ,	"	. . . . .	$\frac{3}{4}$ to 1
" 2,	"	. . . . .	$\frac{1}{2}$ to 1 $\frac{1}{2}$
" 3,	"	. . . . .	1 to 2

No. 4,	for Pipe,	. . . . .	1 $\frac{1}{2}$ to 3
" 5,	"	. . . . .	2 $\frac{1}{2}$ to 4
" 6,	"	. . . . .	3 to 5
" 7,	"	. . . . .	4 to 7

# DAVIS' PATENT ADJUSTABLE PIPE TONGS.

Fig. 189.

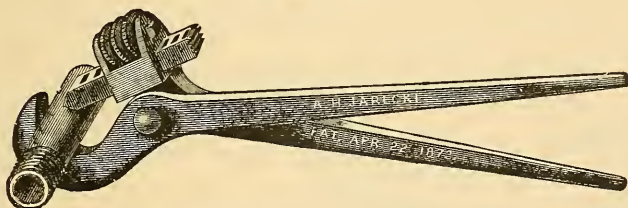


No. 1, for Pipe,  $\frac{1}{4}$  to  $\frac{3}{4}$ .  
 " 1 $\frac{1}{2}$ , "  $\frac{3}{8}$  to 1.  
 " 2, "  $\frac{1}{2}$  to 1 $\frac{1}{4}$ .  
 " 3, " 1 to 2.

No. 4, for Pipe, 1 $\frac{1}{2}$  to 3.  
 " 5, " 2 $\frac{1}{2}$  to 4.  
 " 6, " 3 $\frac{1}{2}$  to 5.  
 " 7, " 4 to 7.

# JARECKI'S ADJUSTABLE PIPE TONGS.

Fig. 190.



No. 0 grips gas burner to  $\frac{3}{4}$ .  
 " 1 " " " to 1.  
 " 2 grips  $\frac{1}{4}$  to 1 $\frac{1}{2}$ .

No. 3 grips  $\frac{1}{2}$  to 2 $\frac{1}{2}$ .  
 " 4 "  $\frac{3}{4}$  to 3 $\frac{1}{2}$ .  
 " 5 " 2 $\frac{1}{2}$  to 6.

# THE BARWICK IMPROVED WRENCH, AND PIPE TONGS.

Fig. 191.

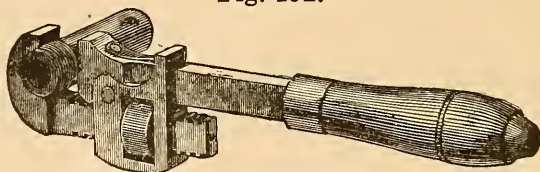


No. 0, taking from No. 7 Wire to  $\frac{1}{2}$  inch Pipe.  
 " 1, " Gas Burner to  $\frac{3}{4}$  " "  
 " 2, "  $\frac{1}{2}$  Pipe, to 1 $\frac{1}{4}$  " "  
 " 3, " 1 " to 2 " "  
 " 4, " 1 $\frac{1}{2}$  " to 3 " "  
 " 5, " 2 $\frac{1}{2}$  " to 4 " "



## STILLSON'S PATENT WRENCH.

Fig. 192.



Pipe is not crushed by its use.

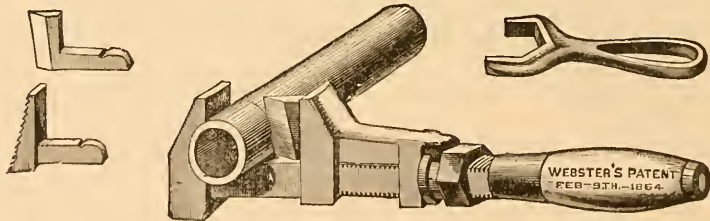
The *Fine Tooth* Wrench is especially adapted for Connecting Steam and Gas Pipes. Ten inch and above have Double Spring. The *Coarse Tooth* Wrench is better adapted for Bolts, Nuts, Studs, &c.

Length open in inches.	6	8	10	14	18	24	36	48
Takes from	$\frac{1}{8}$ in. wire to $\frac{1}{2}$ in. pipe.	$\frac{1}{8}$ in. wire to $\frac{3}{4}$ in. pipe.	$\frac{1}{8}$ in. wire to 1 in. pipe.	$\frac{1}{4}$ in. wire to $1\frac{1}{2}$ in. pipe.	$\frac{1}{4}$ in. wire to 2 in. pipe.	$\frac{1}{4}$ in. wire to $2\frac{1}{2}$ in. pipe.	$\frac{1}{2}$ in. pipe to $3\frac{1}{2}$ in. pipe.	1 in. pipe to 5 in. pipe.
Price . .	1.75	2.00	2.25	3.00	4.00	6.00	12.00	18.00

The Six Inch Wrench, with Screw Driver attachment on end of handle, \$2.12. Nickle Plated, 37 cts. extra.

## WEBSTER'S PAT. COMBINED WRENCH, PIPE WRENCH AND PIPE CUTTER.

Fig. 193.



12 inch, with Tools for Pipe,	$\frac{1}{8}$ to $\frac{3}{4}$ .
15 " " "	$\frac{1}{8}$ to $1\frac{1}{2}$ .
18 " " "	$\frac{1}{8}$ to 2.
21 " " "	$\frac{1}{8}$ to $2\frac{1}{2}$ .

## BAXTER'S ADJUSTABLE "S" WRENCHES.

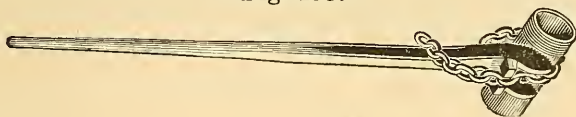
Fig. 194.



Size, 4, 6, 8, 10, 12, 15, inches.

## ROBBINS' PATENT PIPE WRENCH.

Fig. 195.



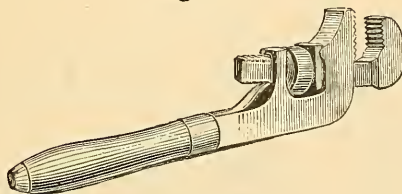
Size 2,	Length of Lever, 27 inches.	Size of Pipe adapted to, 1 to 2 inches.
" 3,	" " 3 feet.	" " " " 1 1/4 to 4 "
" 4,	" " 4 "	" " " " 2 to 6 "
" 5,	" " 5 "	" " " " 2 1/2 to 8 "
" 6,	" " 6 "	" " " " 4 to 10 "

## KEENAN'S WRENCH.

Fig. 196.

FOSTER'S  
PATENT PIPE AND BOLT WRENCH.

Fig. 197.



18 inches.

## COE'S PATENT WRENCH.

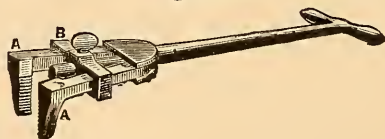
Fig. 198.



Size, 6, 8, 10, 12, 15, 18, 21, inches.

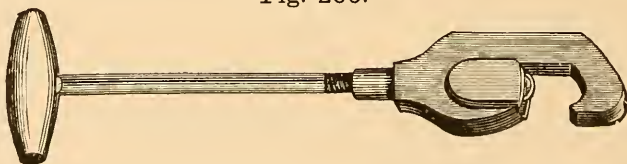
## BUZZELL'S BASIN WRENCH.

Fig. 199.



## STANWOOD'S PATENT PIPE CUTTER.

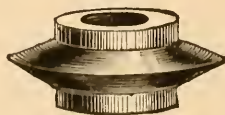
Fig. 200.



No. 1, Case hardened, cuts  $\frac{3}{4}$  to  $\frac{1}{8}$  inch.  
 " 2, " " " 2 to 1 "  
 " 3, " " " 3 to 2 "

## CUTTER WHEEL.

Fig. 201.



Nos. 1, 2, 3.

## MOORE'S TRIPLE ACTION RATCHET WRENCH.

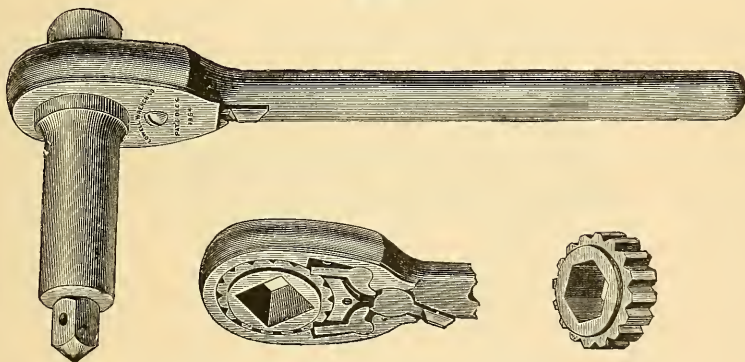
Fig. 202.



Size, 1, Square Nut,	$\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{5}{8}$ inch.	Hexagon,	$\frac{5}{8}$ , $\frac{3}{4}$ inch.
" 2, "	$\frac{5}{8}$ , $\frac{3}{4}$ "	"	$\frac{3}{4}$ , $\frac{7}{8}$ , 1 "
" 3, "	$\frac{3}{4}$ , $\frac{7}{8}$ , 1, $1\frac{1}{8}$ "	"	1, $1\frac{1}{8}$ , $1\frac{1}{4}$ "
" 4, "	$1\frac{1}{8}$ , $1\frac{1}{4}$ , $1\frac{3}{8}$ , $1\frac{1}{2}$ "	"	$1\frac{1}{4}$ , $1\frac{1}{2}$ , $1\frac{3}{4}$ "

## MOORE'S TRIPLE ACTION RATCHET DRILL.

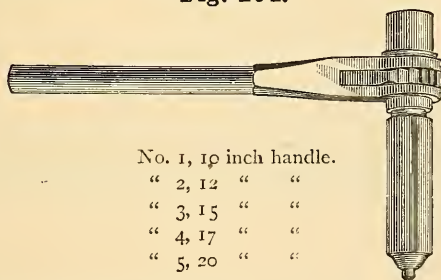
Fig. 203.



No. 1, 10 inch handle.	No. 3, 15 inch handle.
" 2, 12 "	" 4, 18 "

## PACKER'S RATCHET DRILL.

Fig. 204.

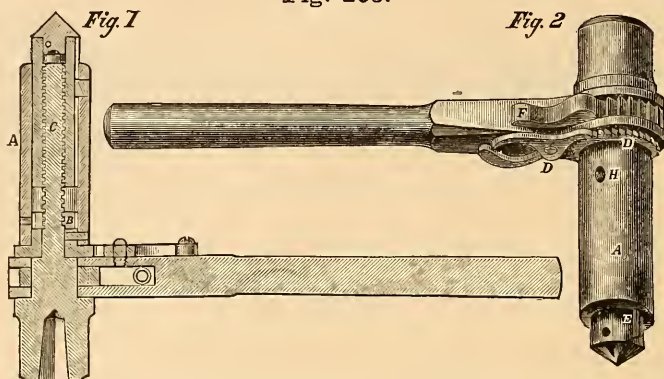


No. 1, 10 inch handle.
" 2, 12 "
" 3, 15 "
" 4, 17 "
" 5, 20 "



## CHAPMAN'S PATENT SELF-FEEDING AND IMPROVED RATCHET DRILLS.

Fig. 205.

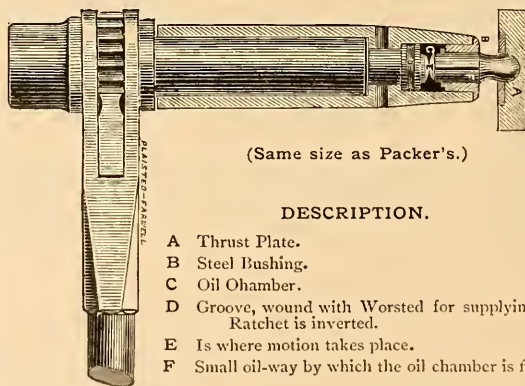


Size, 1, 2, 3, 4, 5.

Length of handle, 10, 12, 15, 17, 20.

## LAVERY'S PATENT RATCHET.

Fig. 206.



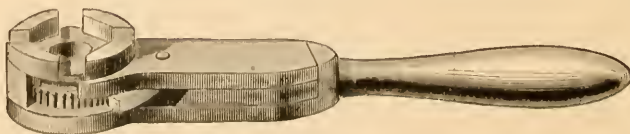
(Same size as Packer's.)

### DESCRIPTION.

- A Thrust Plate.
- B Steel Bushing.
- C Oil Chamber.
- D Groove, wound with Worsted for supplying Oil, when the Ratchet is inverted.
- E Is where motion takes place.
- F Small oil-way by which the oil chamber is filled.

## WILSON'S R. AND L. HAND WRENCH AND RATCHET.

Fig. 207.

No. 0, takes from  $\frac{1}{4}$  to  $\frac{3}{4}$  Nut." 1, " "  $\frac{3}{4}$  to  $1\frac{1}{4}$  "No. 2, takes from  $1\frac{1}{4}$  to 2 Nut." 3, " "  $1\frac{1}{2}$  to 3 "

## PIPE SCREWING MACHINES.

## W. D. CHASE'S PATENT MACHINE.

Fig. 208.

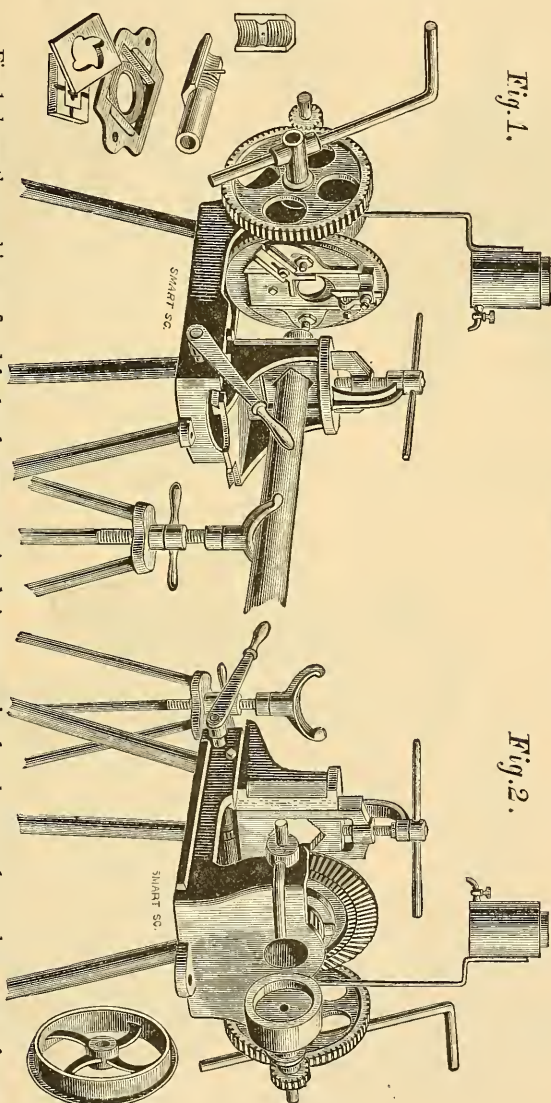


Fig. 1 shows the machine as fitted for hand power, motion being transmitted to the several parts by means of gearing, as shown; while on the right is seen the pipe-rest and pipe held stationary by the adjustable jaws of the vise, which passes through the centre of gear, the rotary motion of which is imparted to the die held in the die box.

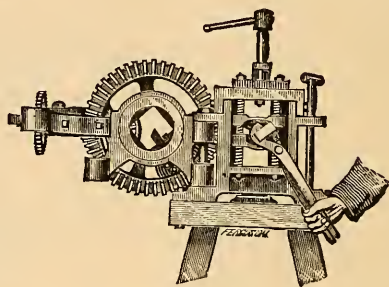
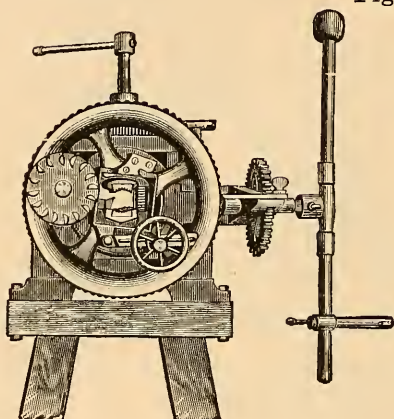
When cutting pipe, the cutting-off tool has automatic feed, cutting ends of pipe square and smooth.

Fig. 2 shows the reverse of the side shown in Fig. 1.

Price, \$125, which includes a full set of Collars for making Nipples. Dies, \$20, (from  $\frac{1}{8}$  to 2 inches) extra.

THE C. W. ROBERTS  
Pipe Cutting and Threading Machine and Vise.

Fig. 209.

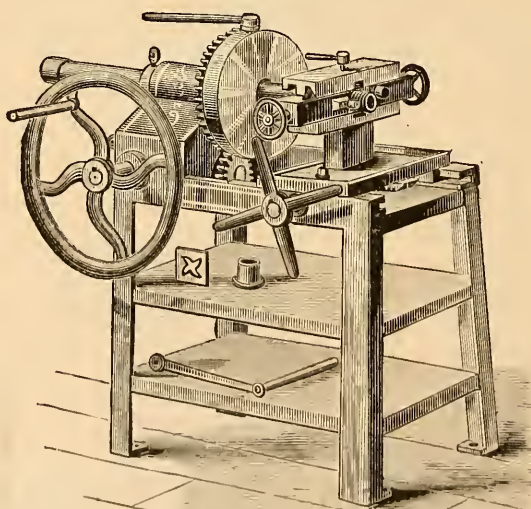


MACHINE, . . . . \$95.00.

Dies,  $\frac{1}{4}$  to 2 inch extra.

CAMDEN No. 2 HAND SCREWING MACHINE.

Fig. 210.

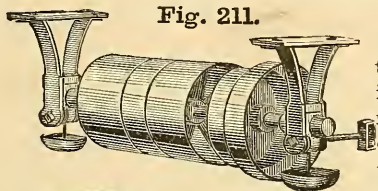


No. 2 Hand Screwing Machine, with Single and Double Gear, to Screw and cut off pipe from  $\frac{1}{8}$  to 2 inches, inclusive, with Bushings and Solid Dies, to screw  $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$  and 2 inch pipe.



## CAMDEN No. 2 POWER MACHINE.

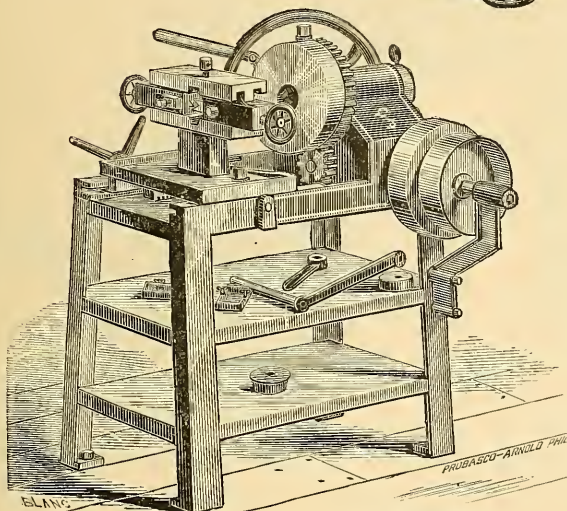
Fig. 211.



This machine being intended to work by power, is well and substantially made. The strain on Machine Cone Pulley is sustained by outside Bracket, which is well secured to frame of Machine. The Hand or Balance Wheel, shown in the cut, goes with the machine, so that it can be worked by Hand as well as Power.

It has fast and slow Gear; cuts off and screws Pipe from  $\frac{1}{8}$  to 2 inches, inclusive; and will be found a great improvement on any machine of this class in the market.

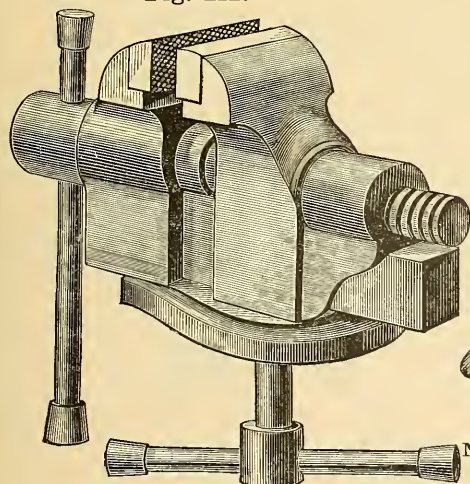
Complete, with Counter Shaft, Pulleys, Hangers; also, Bushings, Guides and Dies,  $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$  and 2.



## VISES.

Walworth Mfg. Co's Pattern.

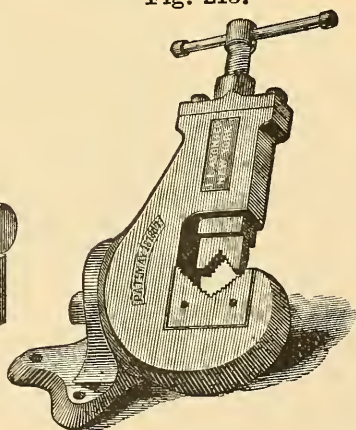
Fig. 212.



5 inch Jaw.

NASON'S PIPE VISE.

Fig. 213.

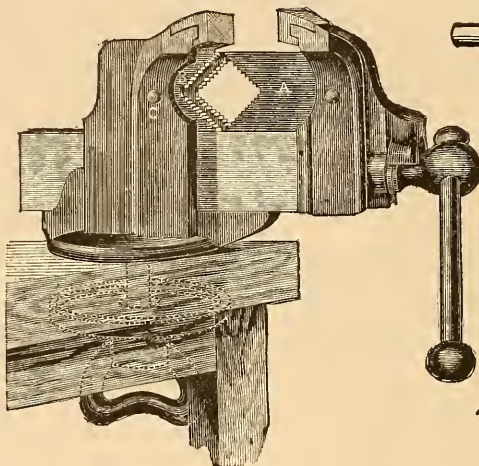


No. 1,  $\frac{1}{8}$  to  $1\frac{1}{4}$  in. No. 2,  $\frac{1}{8}$  to 2 in.  
No. 3,  $\frac{1}{4}$  to 3 in.



## SMITH'S PATENT.

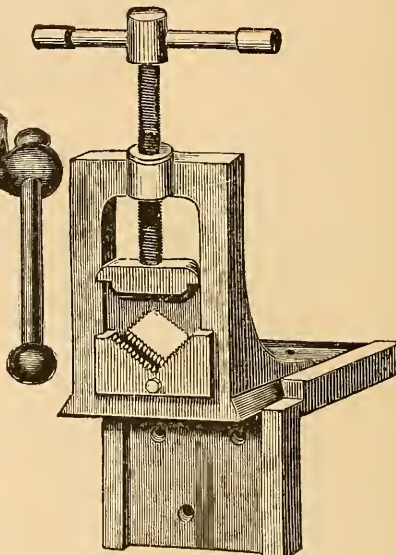
Fig. 214.



No. 1,  $\frac{1}{8}$  to 2 inch. No. 2,  $\frac{1}{2}$  to 3 inch.

## PIPE VISE.

Fig. 215.

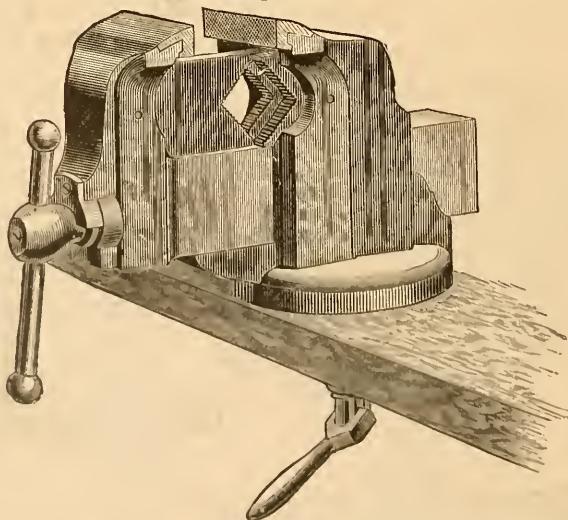


(With Angle Plate.)

No. 1,  $\frac{1}{8}$  to 2 in. No. 2,  $\frac{1}{2}$  to 3 in.

## PARKER'S COMBINATION VISE.

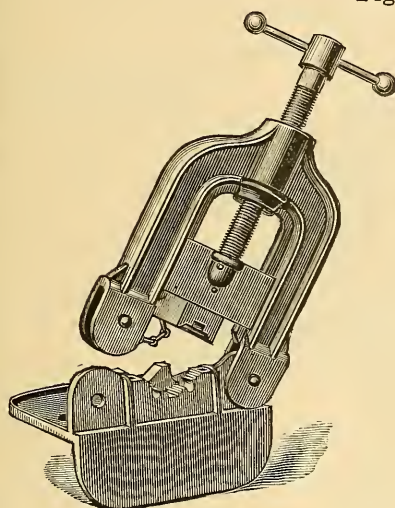
Fig. 216.



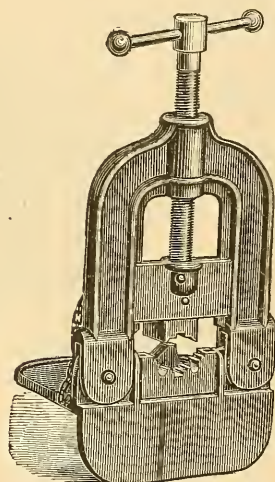
No. 1 for 2 inch Pipe and under. No. 2 for 3 inch Pipe and under.

# MALLEABLE IRON PIPE VISE.

Fig. 217.



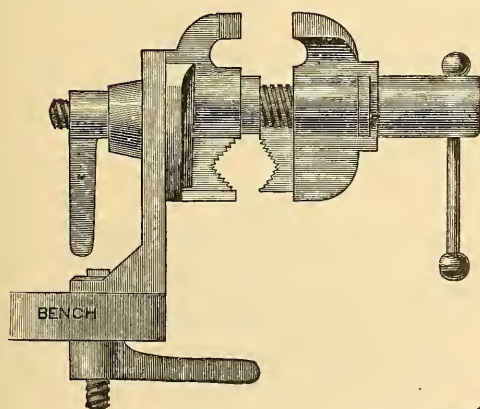
(OPEN.)



(SHUT.)

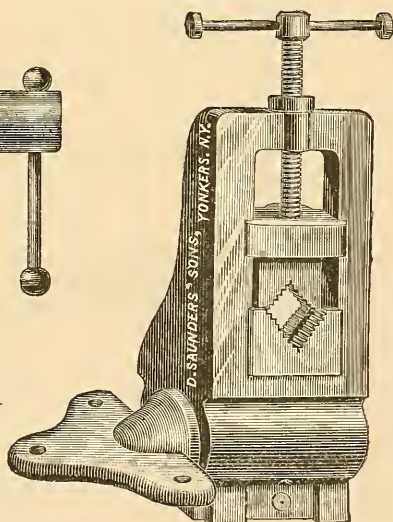
# UNIVERSAL VISE.

Fig. 218.



# D. SAUNDERS' SONS' IMPROVED PIPE VISE.

Fig. 219.

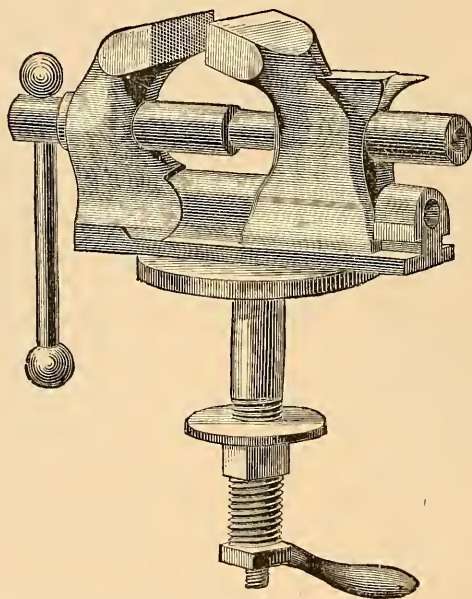


No. 1, to hold Pipe from  $\frac{1}{8}$  to 2 in. diam.  
 " 2, to hold Pipe from  $\frac{1}{2}$  to 3 in. diam.

## MILLERS FALLS VISE.

Union and Backus Vise Combined — Heavy or Chipping Vise. Covered Screw.

Fig. 220.



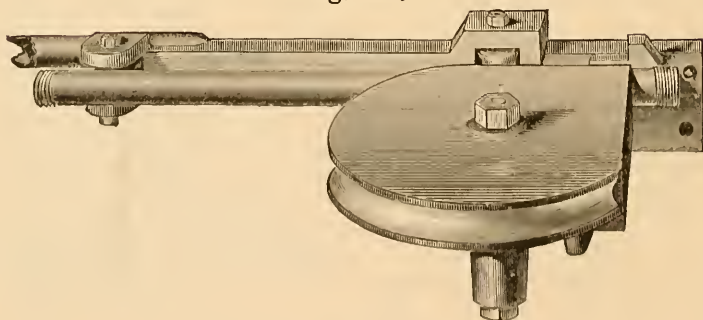
If seats are wanted, please so mention in your orders.

Width of Jaw,  $1\frac{1}{2}$ ,  $1\frac{3}{4}$ , 2,  $2\frac{1}{2}$ , 3,  $3\frac{1}{2}$ , 4,  $4\frac{1}{2}$ , 5, 6 and 7 inches.

Weight,  $3\frac{1}{2}$ , 5, 9, 22, 39, 47, 56, 67, 75, 116 and 169 lbs.

## PIPE BENDING MACHINE.

Fig. 221.



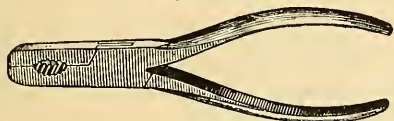
Three sizes for  $\frac{3}{4}$ , 1 and  $1\frac{1}{4}$  inch Pipe.



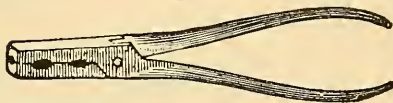
## BURNER PLYERS.

Fig. 222.

Fig. 223.



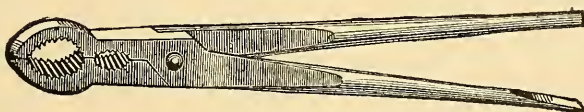
One hole, 5 and 6 inches.



Two holes, 7 inches.

## GAS PLYERS.

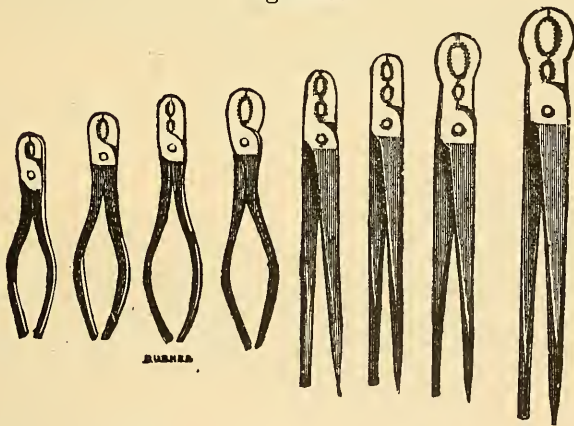
Fig. 224.



8 to 14 inch inclusive.

## HUBER'S GAS PLYERS.

Fig. 225.



Number, 0, 1, 2, 3, 4, 5, 6.  
Length, inches, 6, 7, 8, 9, 10, 11, 12.

## GAS FITTERS' AUGERS.

Fig. 226.

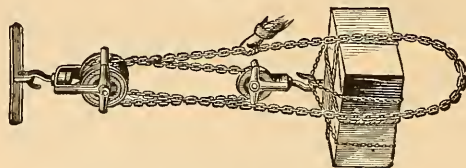


For all sizes Pipe,  $\frac{1}{4}$  to 3 inch inclusive.  
In ordering Augers, state "Pipe Size."



## WESTON'S PATENT DIFFERENTIAL PULLEY BLOCKS.

Fig. 227.



(No. 2, without Sprocket Wheel.)

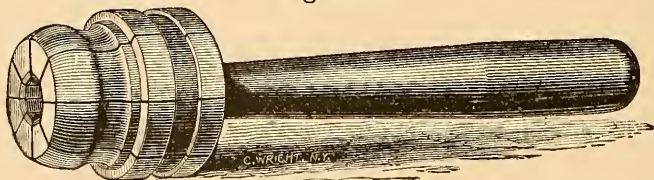
Block tested to, . . . . .  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1,  $1\frac{1}{2}$ , 2, 3 Ton.

No. Feet Chain in each Block, 26, 26, 30, 34, 38, 38

## PROSSER'S BOILER TUBE EXPANDER.

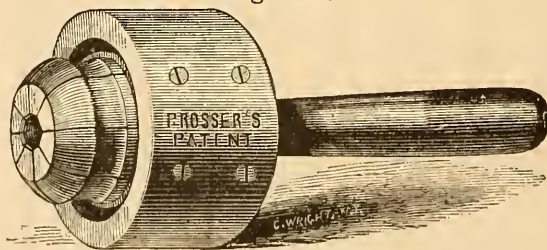
PATENT (SPRING) TUBE EXPANDER.

Fig. 228.



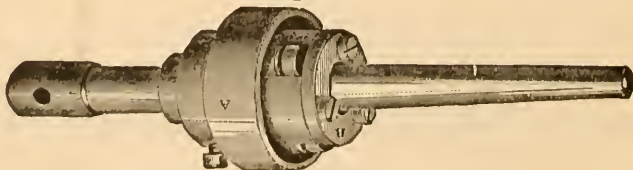
PATENT (GUIDE RING) TUBE EXPANDER.

Fig. 229.



## DUDGEON'S ROLLER TUBE EXPANDER.

Fig. 230.



When ordering Expanders, please state thickness of Tube Plate for which they are required, and give outside diameter of the Tube.

## WOODMAN'S PATENT PORTABLE DRILLER

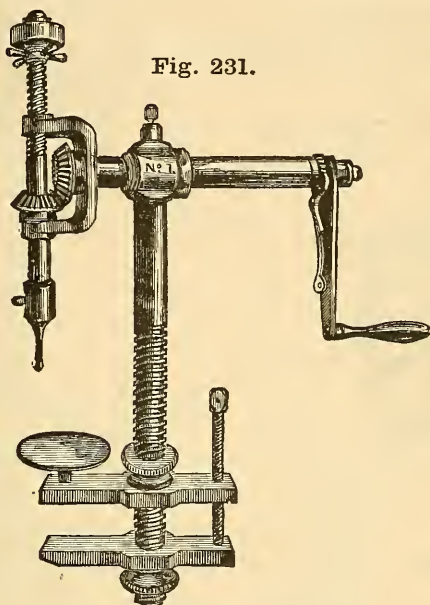


Fig. 231.

Size, Nos. 1, 2, 3, 4, 5, 6, 7.  
Will drill,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ ,  $1\frac{3}{4}$  inch hole.

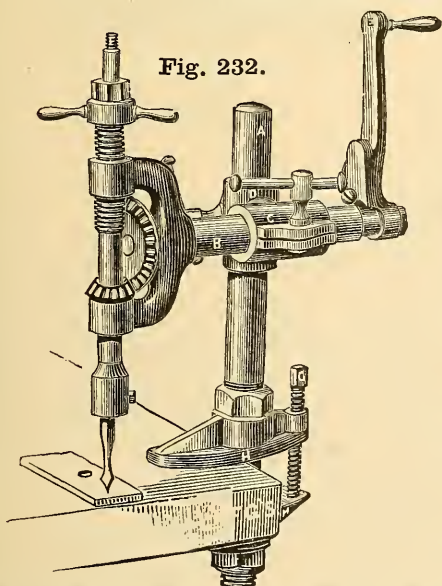
THE IMPROVED PATENT  
UNIVERSAL ANGULAR AND RATCHET  
DRILLING MACHINE.

Fig. 232.

They will work at any angle. By placing the crank on the drill spindle, it will work with a ratchet or without. We send a chuck with each machine which will hold 1-16 to  $\frac{1}{2}$  inch drills.

- |   |  |
|---|--|
| No. 1, Weight, 26 lb. Drills up to $\frac{5}{8}$ inch hole. |  |
| No. 2, Weight, 52 lb. " " 1 inch hole.                      |  |
| No. 3, Weight, 106 lb. " " $1\frac{1}{2}$ inch hole.        |  |
| No. 4, Weight, 52 lb. " " $1\frac{1}{2}$ inch hole.         |  |

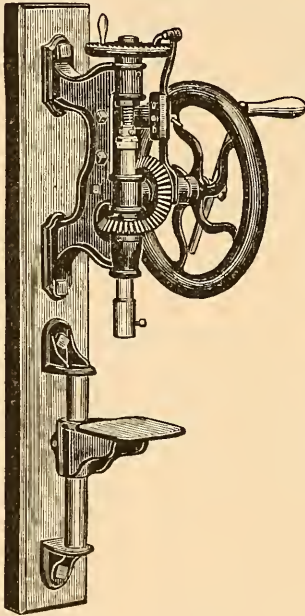
The No. 4 is made of steel and malleable iron; Nos. 1, 2 and 3 are wrought, malleable and gray iron.

With two sets of Gear (making either speeded or geared back machine), extra, \$2.00.

Self Feed Machine, extra, \$6.00.

# No. 1 UPRIGHT SELF-FEEDING DRILL.

Fig. 233.



Drills from  $\frac{1}{8}$  to  $\frac{3}{4}$  inch hole.  
Length, 42 inches. Weight, 95 pounds.

# THE BREAST DRILL, Converted into an Upright Lever Drill.

Fig. 234.

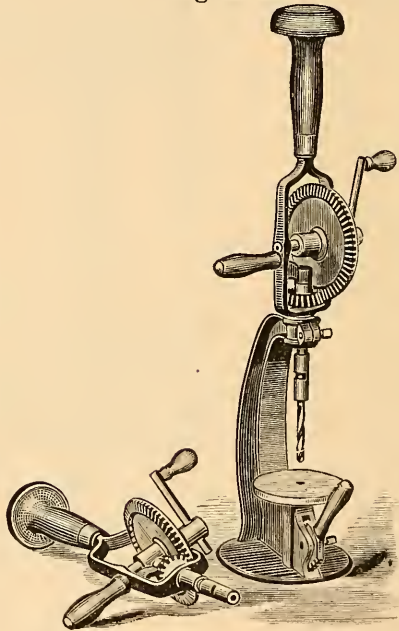


Fig. 235.



# PLATFORM DRILL PRESS.

ARRANGED FOR HAND OR POWER.

FURNISHED WITH

A THREE STEP CONE PULLEY,

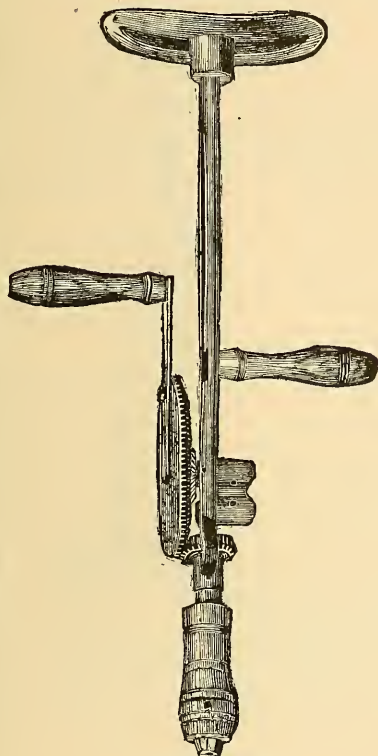
Lever Feed, Cut Gear, Steel Spindle and Screws.

And in every way a first-class Machine.

Weight, 22 lbs. Drill  $\frac{1}{2}$  inch hole.  
With Chuck, and 6 Twist Drills, from 1-16 to  $\frac{3}{8}$  inches.

# BREAST DRILL.

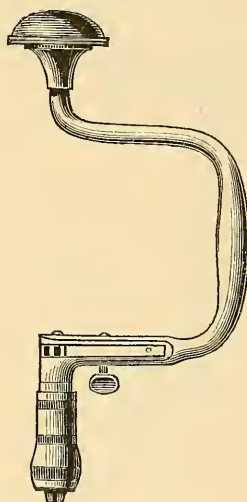
Fig. 236.



(Double Geared.)

# LYNAM'S PATENT RATCHET BIT BRACE.

Fig. 237.

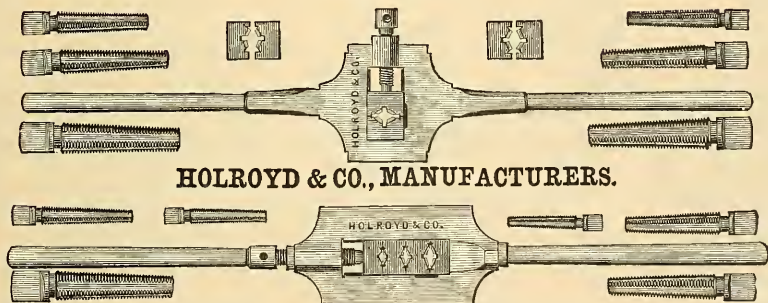


No. 1, 12 in. sweep. No. 2, 10 in. sweep.

# STOCKS AND DIES.

(BLACKSMITHS'.)

Fig. 238.



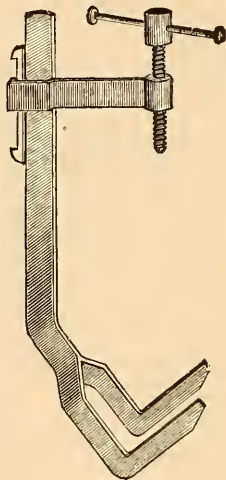
HOLROYD & CO., MANUFACTURERS.



## CROW,

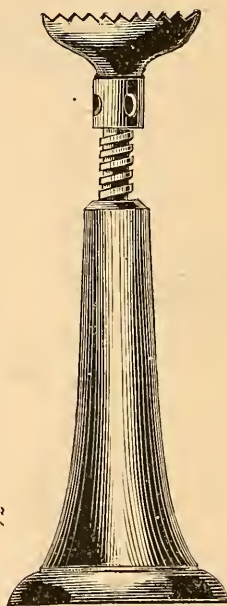
For Drilling and Tapping Street Mains.

Fig. 239.



## JACK SCREWS.

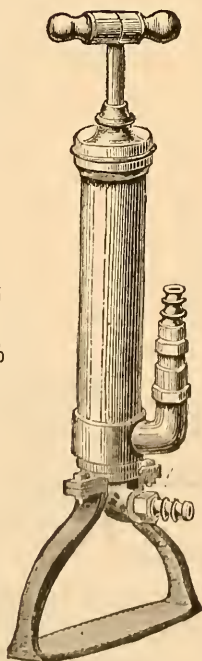
Fig. 240.



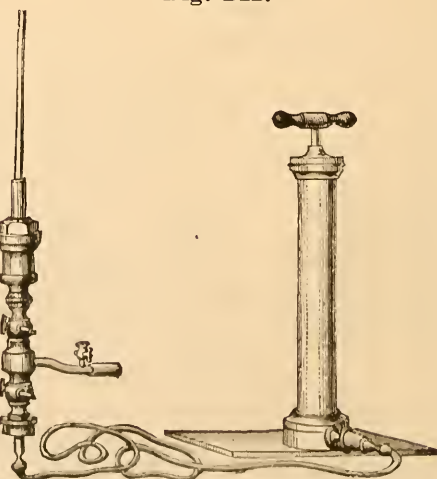
1 1/4	inches in diameter,	Iron Barrel,	8	in. long.
1 1/2	"	"	8 3/4	"
1 3/4	"	"	9 1/2	"
2	"	"	10 1/4	"
2 1/2	"	"	12	"

## Gas Fitters' and Plumbers' Force Pump.

Fig. 241.



To force sediment from Pipe. Price \$18.00.



## GAS FITTERS'

## Proving Pump and Gauge.

Fig. 242.

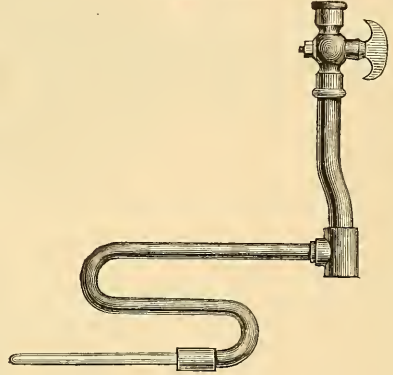
## GAS FITTERS' PROVING PUMPS.

(Walworth Manufacturing Co's Pattern, with Syphon.)

Fig. 243.

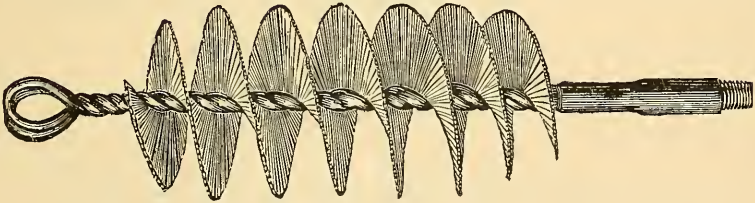


Fig. 244.



## FLAT STEEL WIRE TUBE BRUSHES.

Fig. 245.



## SPENCER'S STEEL WIRE TUBE BRUSH.

Fig. 246.

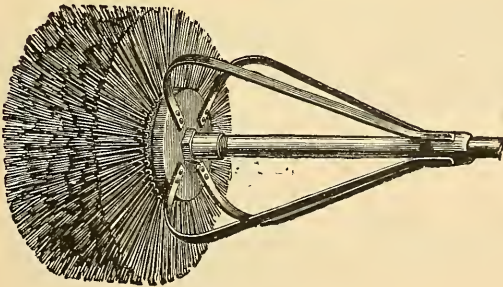
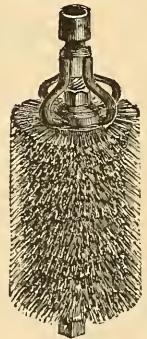
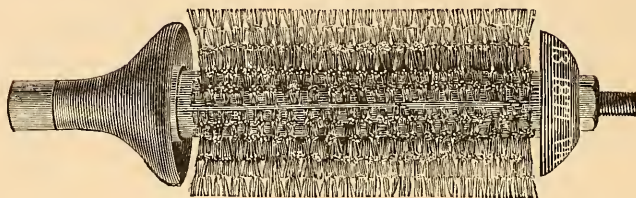


Fig. 247.



## ABRAMS' FLUE BRUSH.

Fig. 248.



Patented May 11th, 1875, and Feb. 11th, 1877.

## JACKSON'S FLUE SCRAPER.

Fig. 249.



## NATIONAL FLUE SCRAPER.

Fig. 250.



## ELASTIC TUBE SCRAPER.

Fig. 251.

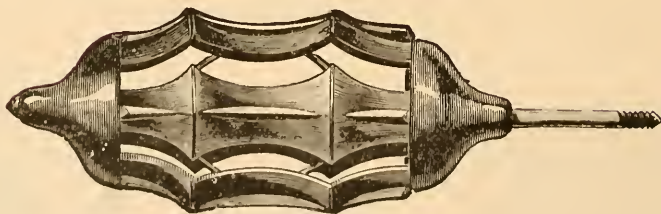


Fig. 252.

## MORSE'S PATENT

Boiler Tube



Cleaner.

# CHISTOFFEL'S BOILER TUBE SCRAPER.

Fig. 253.



(ELLIPTICAL.)

Fig. 254.

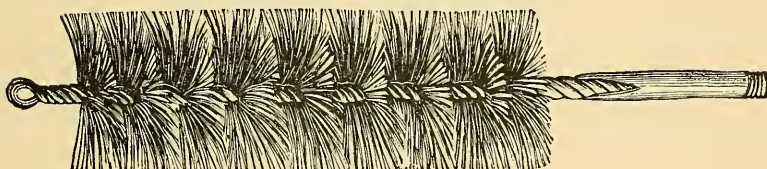


(COIL.)

# WHALEBONE FLUE BRUSHES.

With Ends Screwed to connect with Wrought Iron Pipe.

Fig. 255.



# STEEL WIRE BRUSH.

(NOT TINNED.)

Fig. 256.

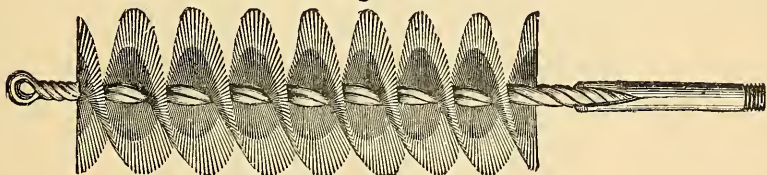
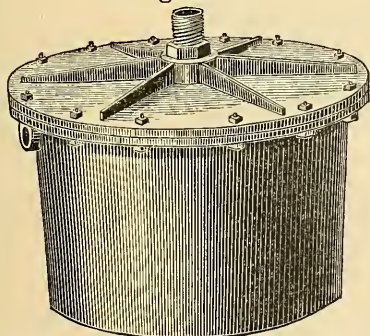


Fig. 257.



# VALVE BOXES.

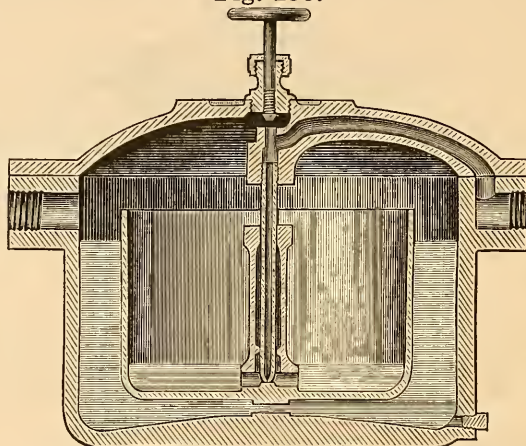
With Brass Spindle.

12, 15 and 18 inch.



# STEAM TRAPS.

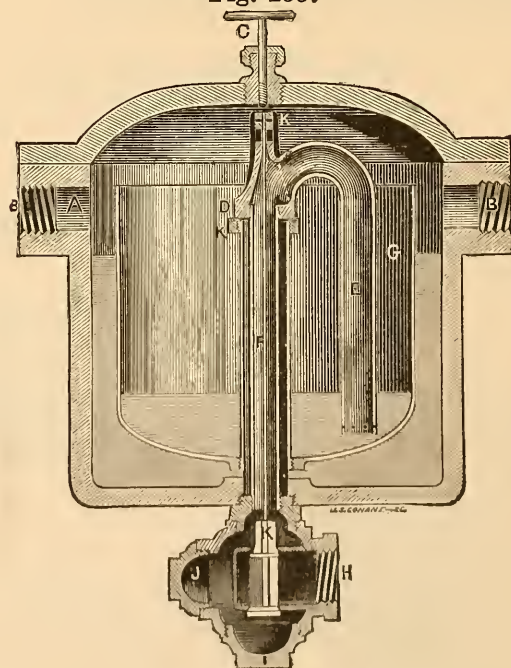
Fig. 258.



Size, Condensing Capacity 1 in. Pipe, feet, Nos. 0, 1, 2, 3, 4.  
500, 1,500, 2,500, 4,500, 6,000.

# LOCKE'S IMPROVED STEAM TRAPS.

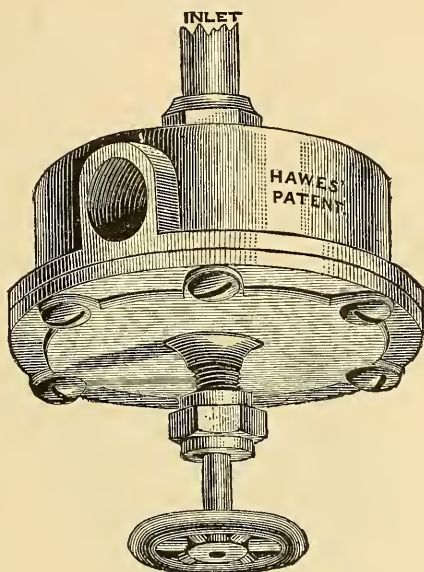
Fig. 259.



Three Sizes, Nos. 1, 2 and 3.

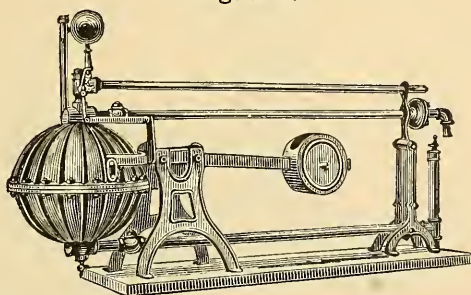
## HAWES' STEAM TRAP.

Fig. 260.



## ALBANY STEAM TRAP CO'S GRAVITATING RETURN TRAP.

Fig. 261.



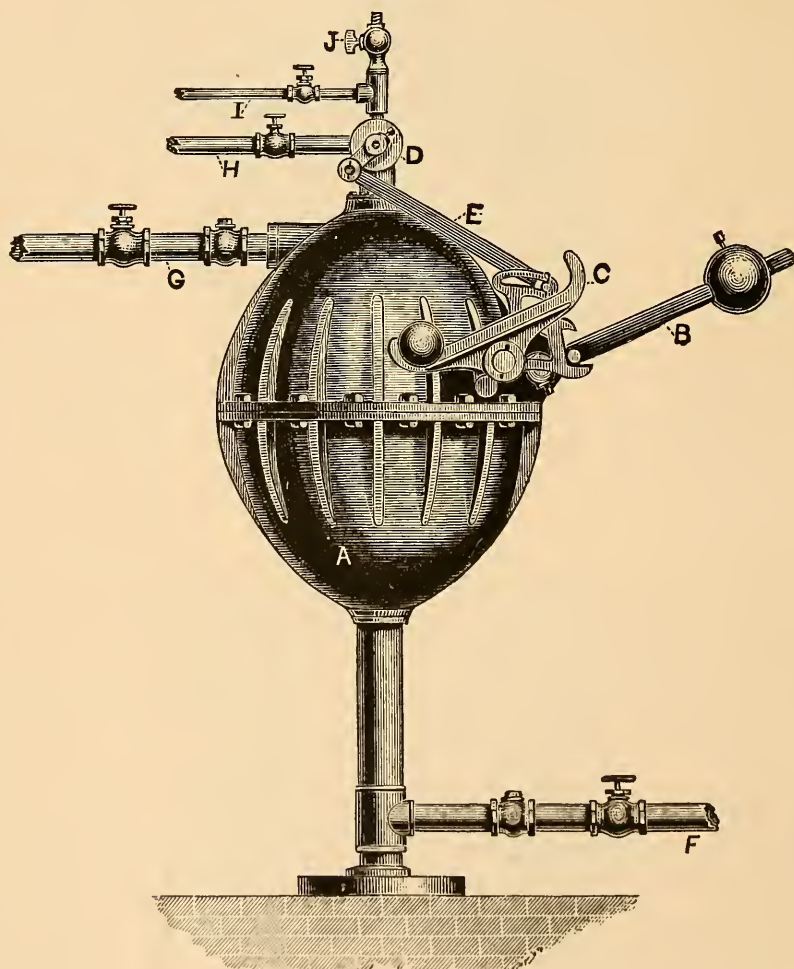
This Trap automatically drains the water of condensation from HEATING COILS, and returns the same to the Boiler, whether the Coils are *above or below* the water level in Boiler, thus doing away with pumps and other mechanical devices for such purposes.

Small size for 3,500 feet, 1 inch Pipe.

Large " " 7,000 " 1 "

# PRATT'S AUTOMATIC BOILER FEEDER, and RETURN STEAM TRAP.

Fig. 262.



No. 1, To feed from 20 to 50 Horse Power.

" 2, " " 75 to 125 "

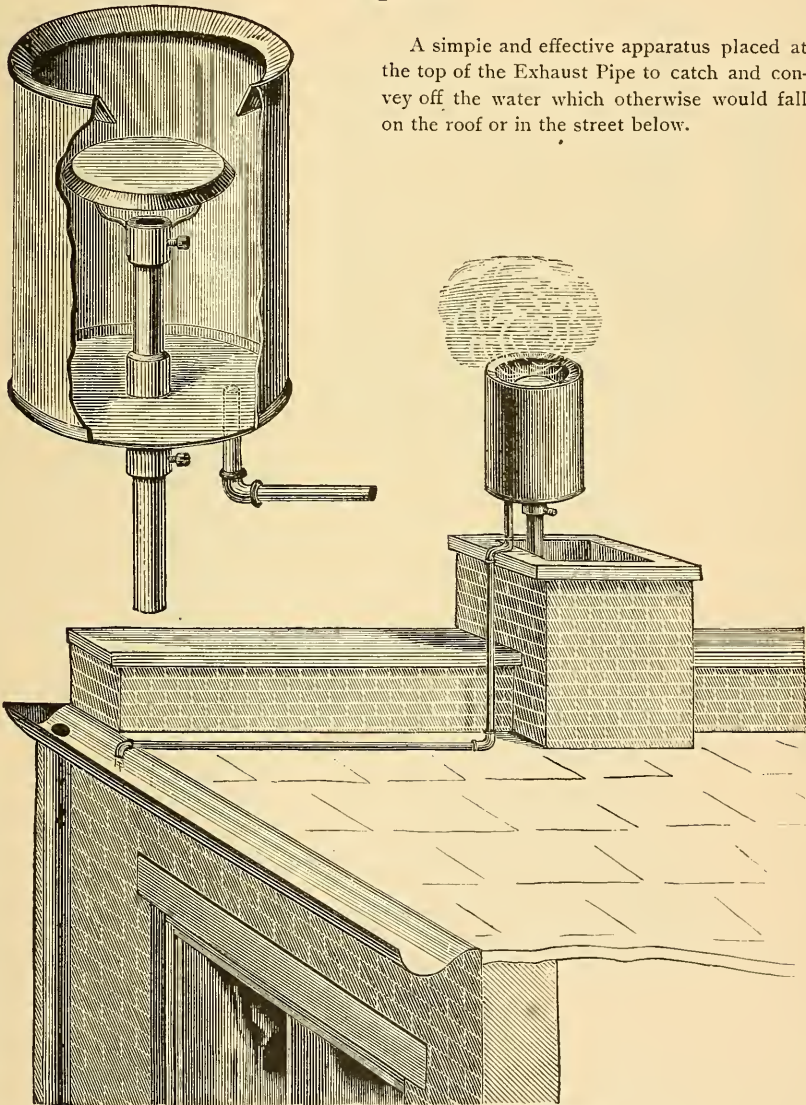
" 3, " " 150 to 250 "



# CONROW'S PATENT EXHAUST TRAPS, FOR STEAM PIPES.

Fig. 263.

A simple and effective apparatus placed at the top of the Exhaust Pipe to catch and convey off the water which otherwise would fall on the roof or in the street below.

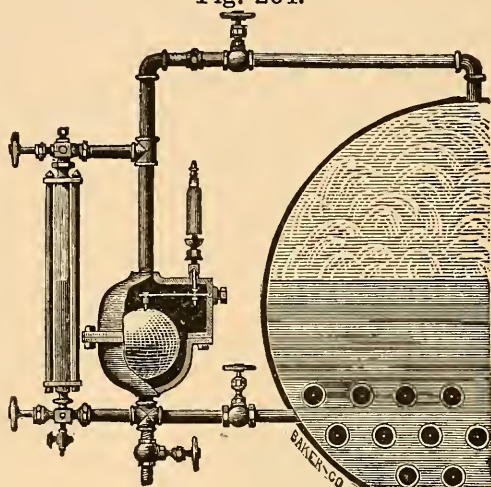


Sizes :	No. 1.	For 1	in. Exhaust Pipe.	Drum 12x14 in.	Discharge Pipe, $\frac{1}{2}$ in.
	No. 1½.	" 1½	" " "	Drum 14x16 "	" " $\frac{1}{2}$ in.
	No. 2.	" 2	" " "	Drum 16x18 "	" " 1 in.
	No. 2½.	" 2½	" " "	Drum 16x20 "	" " 1 in.
	No. 3.	" 3	" " "	Drum 18x20 "	" " 1 in.
	No. 4.	" 4	" " "	Drum 20x24 "	" " 1¼ in.
	No. 5.	" 5	" " "	Drum 22x26 "	" " 1½ in.



## Lee's Low Water Alarm.

Fig. 264.



## VAPOR POTS.

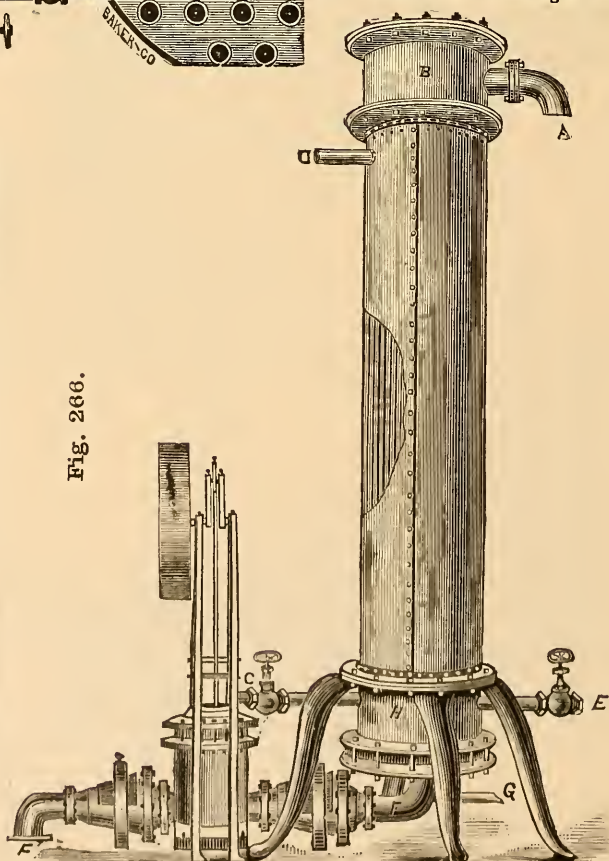
Fig. 265.



For Cotton Weaving Rooms.

## HODGINS' CONDENSING HEATER.

Fig. 266.

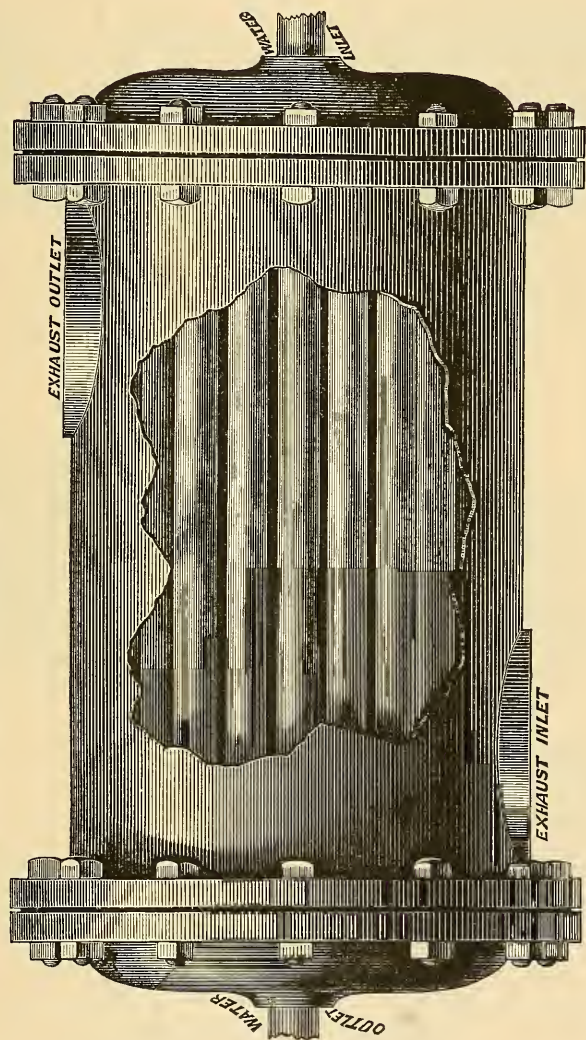


## IMPROVED TUBULAR WATER HEATER.

Fig. 267.

The sizes enumerated we keep constantly on hand.

Larger Heaters, with wrought iron shells, we make to order, suitable for boilers from 50 to 250 horse power.

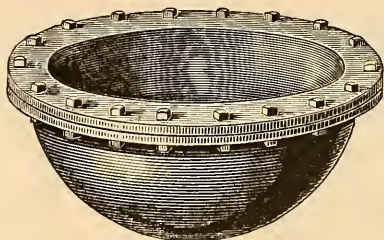


Diameter, 6, 8, 15, 15 inches.  
Length, 3, 3, 2, 4 feet.

In this Heater, the water passes three times through the length of the heater in sections of tubes, the exhaust steam entirely surrounding them, filling the shell of the heater; entering and discharging upon opposite sides, while the water is received and delivered at the ends.

## Glue and Paste Kettles.

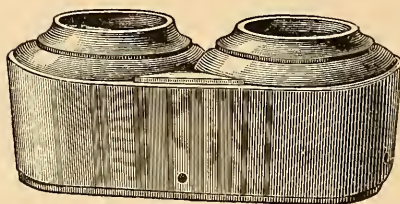
Fig. 268.



Double Cased and Bolted.

## Glue Heaters.

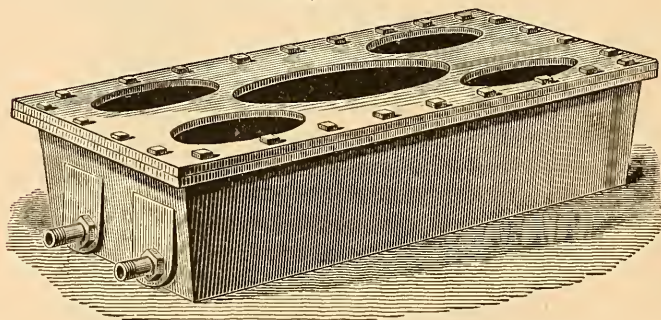
Fig. 269.



TWO HOLES.

## GLUE HEATERS.

Fig. 270.



Four small and one large hole.

## STEAM DISHES FOR HOTELS.

Fig. 271.

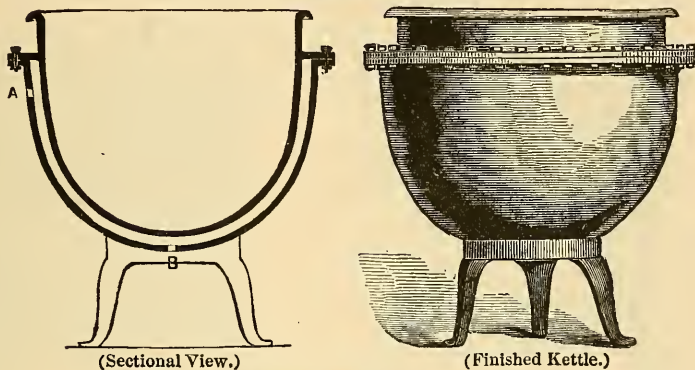


Size of Dishes, {	No. 1,	No. 2,	No. 3,
	$12\frac{3}{4} \times 17\frac{1}{2}$ ,	$14 \times 18$ .	$14 \times 19\frac{1}{2}$ .



## STEAM JACKET KETTLES.

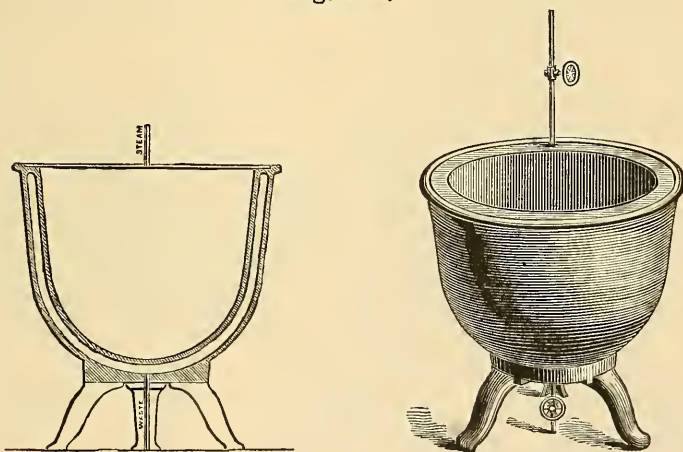
Fig. 272.



Flanged and Bolted.

WHITELEY'S PATENT  
SEAMLESS DOUBLE JACKET KETTLE.

Fig. 273.

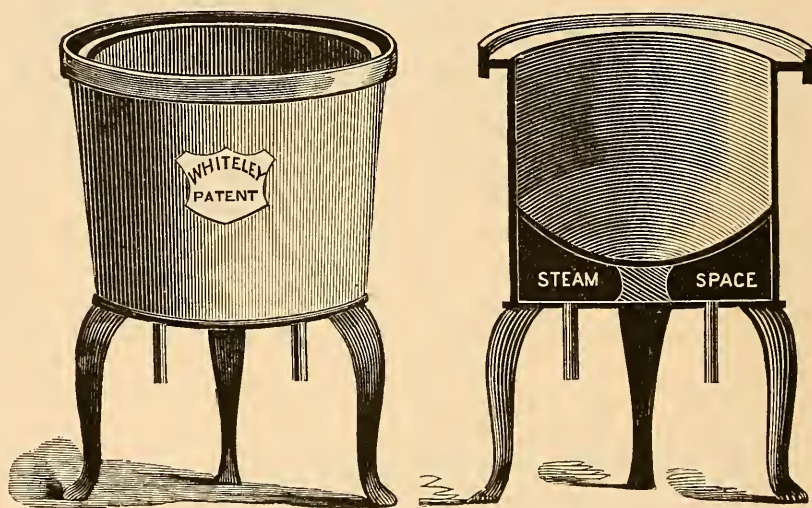


These kettles are all cast in one piece, having a steam space cored out, and requiring no bolts or packing in their construction, are much quicker boiled, and are all proved at a steam pressure of 75 pounds. They are rapidly coming into use, and where used give entire satisfaction.



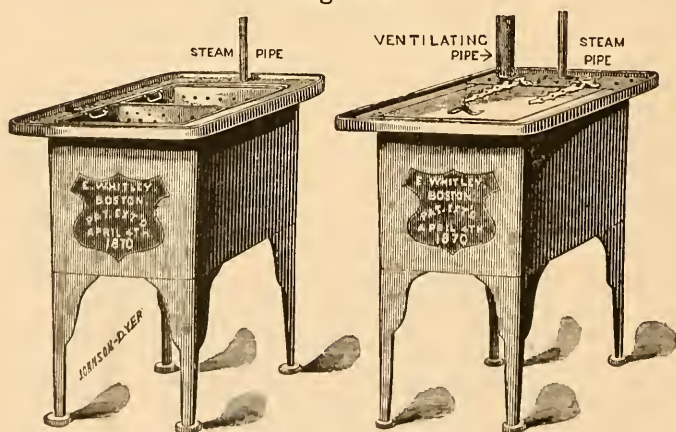
## WHITELEY'S SEAMLESS HALF JACKETED KETTLES.

Fig. 274.



## WHITELEY'S PATENT STEAMERS.

Fig. 275.

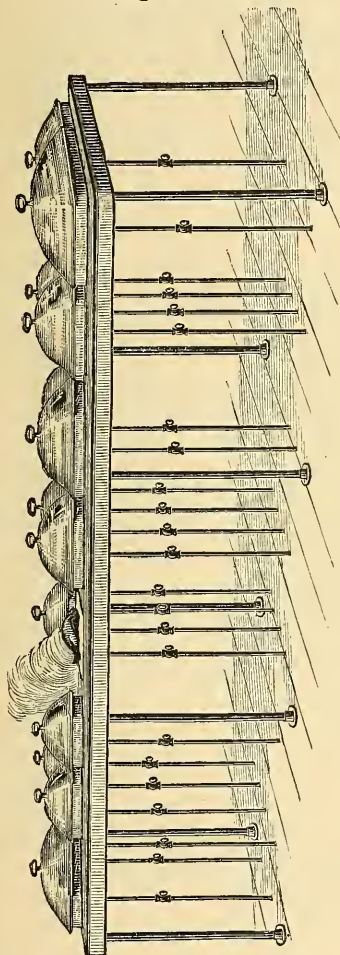


This form of steam apparatus is made of cast iron, either plain or jacketed. They are in use in all the principal hotels and restaurants, and are an excellent article.

Capacity, No. 0,  $\frac{1}{2}$  bushel. No. 2, 1 bushel. No. 3, 2 bushels. No. 4, 3 bushels.

# Steam Carving Tube.

Fig. 276.



# Laundry Stands.

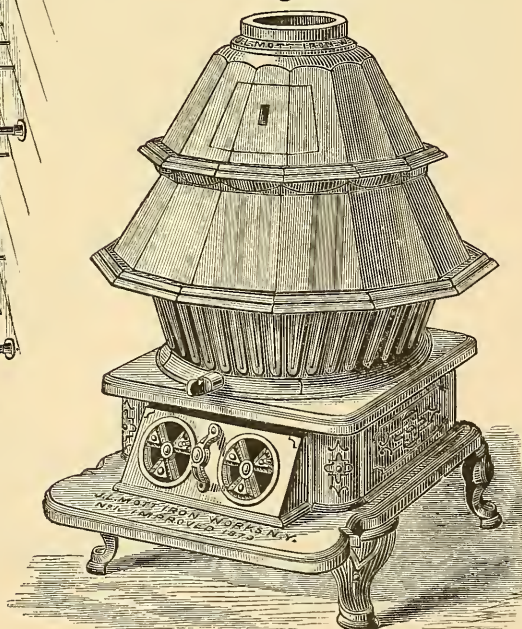
Fig. 277.



$\frac{3}{4}$  and 1 inch.

# FLAT IRON HEATER.

Fig. 278.

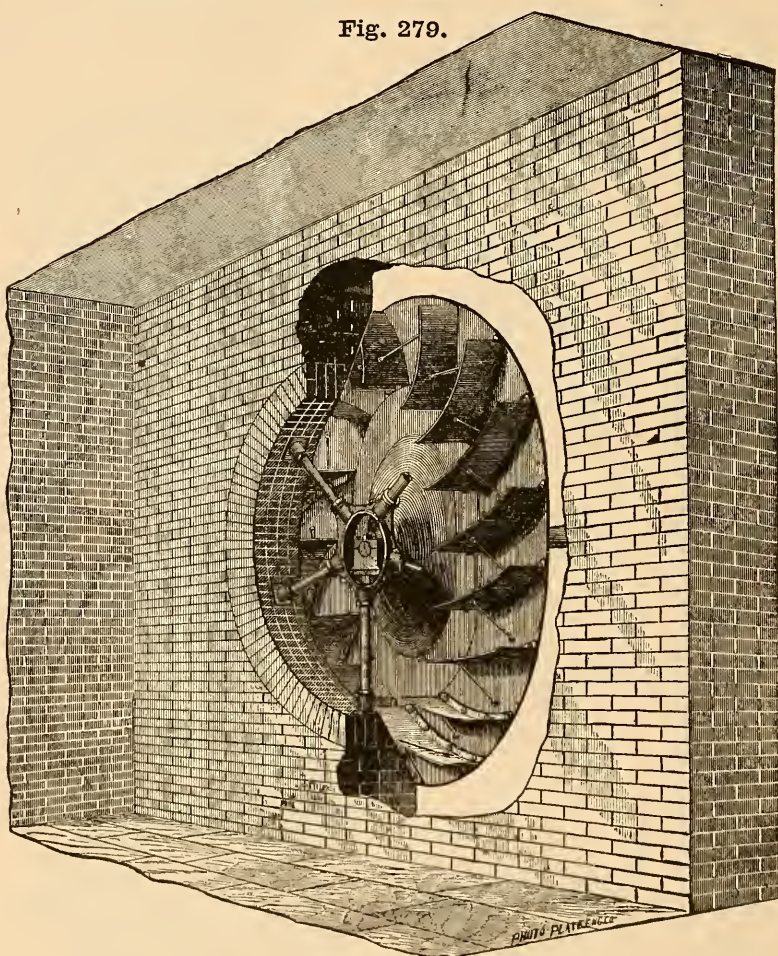


Several Sizes.



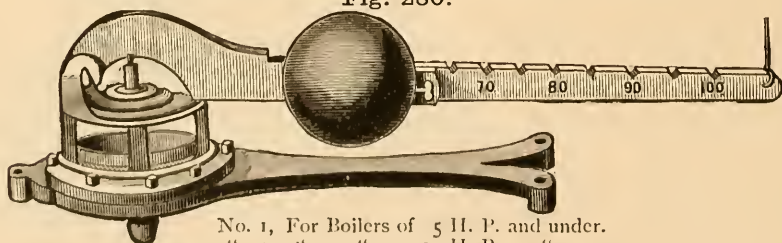
# NASON'S VENTILATING FANS.

Fig. 279.



# Clark's Patent Steam and Fire Regulator.

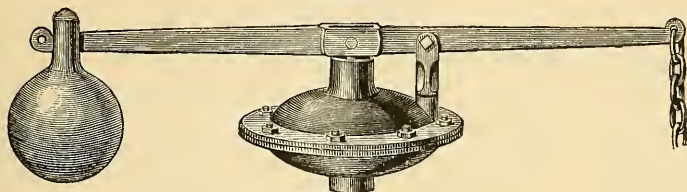
Fig. 280.



No. 1, For Boilers of 5 H. P. and under.  
 " 2, " " 20 H. P. "  
 " 3, " " 30 H. P. and above.

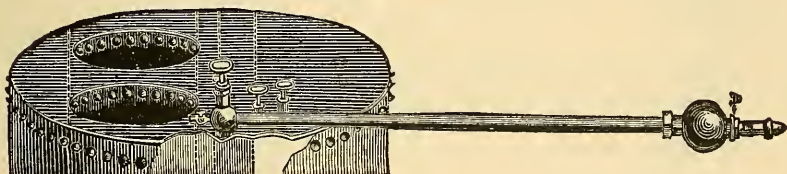
## LOW PRESSURE DAMPER.

Fig. 281.



## ASHCROFT'S LOW WATER DETECTOR.

Fig. 282.

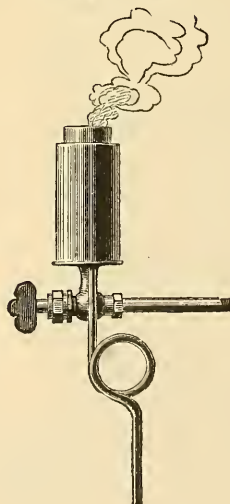
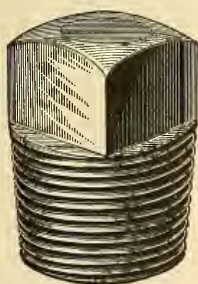


## MERRILL'S AIR MOISTENER.

Fig. 284.

## FUSIBLE PLUGS.

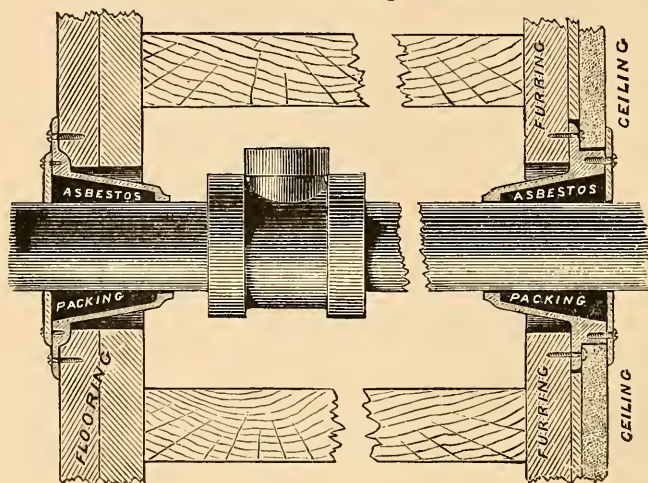
Fig. 283.





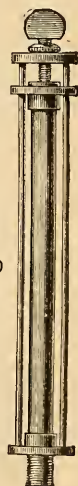
## WALWORTH'S FIRE-PROOF FLOOR PACKING.

Fig. 285.



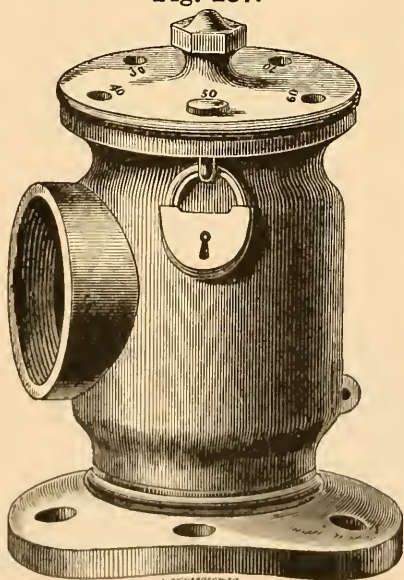
## AUTOMATIC AIR VALVE.

Fig. 286.



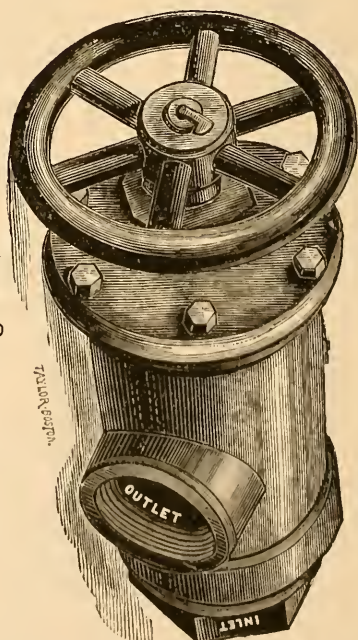
## ASHTON'S LOCK SAFETY VALVE

Fig. 287.



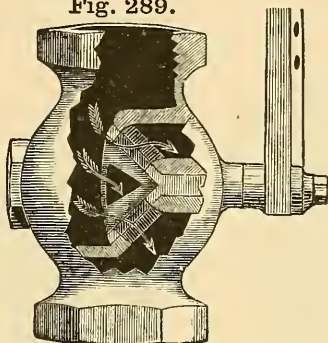
## ASHTON'S RELIEF VALVE.

Fig. 288.



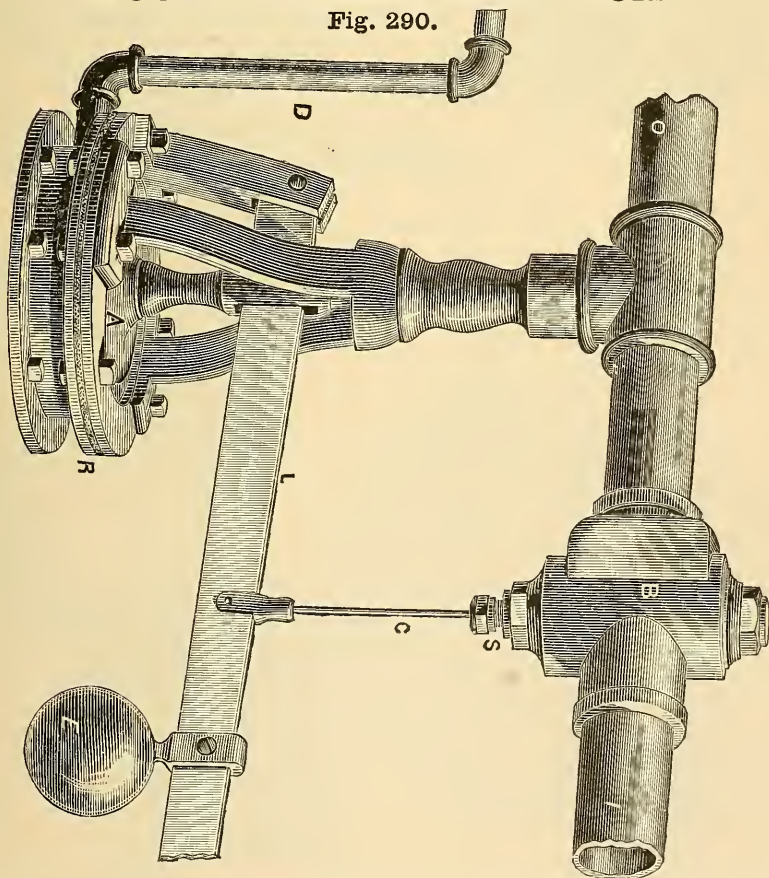
# FITTS' CHRONOMETER GOVERNOR VALVE.

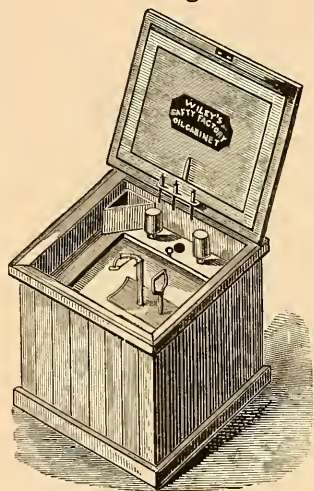
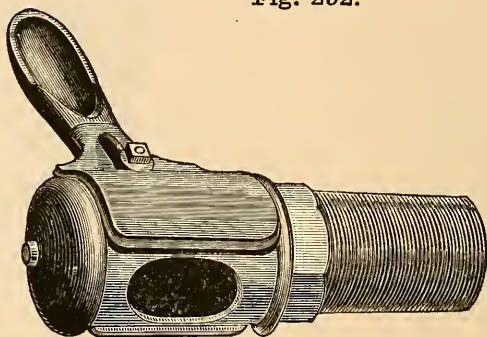
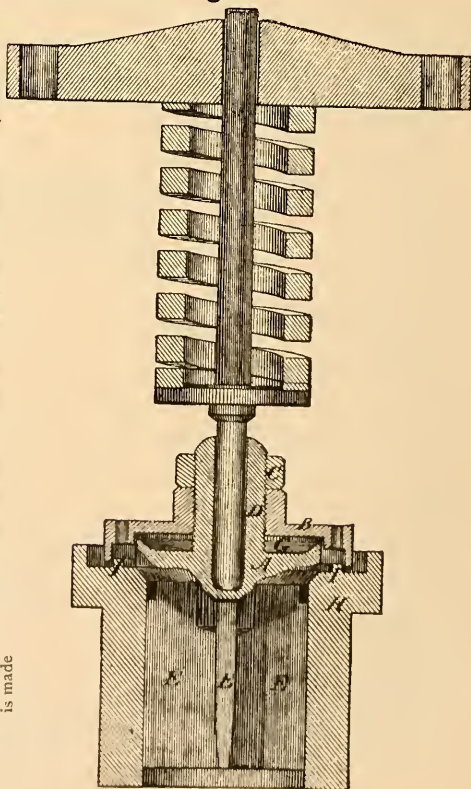
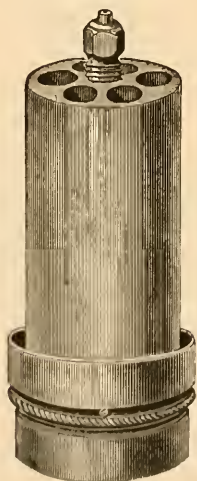
Fig. 289.



# LOCKE'S STEAM REGULATOR.

Fig. 290.



**Mill & Factory Oil Cabinet.****Fig. 291.****Molasses Gates.****Fig. 292.****MOONEY & MACK'S  
PATENT SAFETY VALVE.****Fig. 294.****CROSBY'S  
Pop Safety Valve.****Fig. 293.**

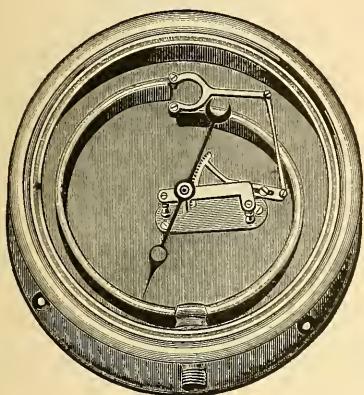
A The Valve. B Adjustable Overhang. C Locknut, by which the adjustment is fastened.  
D Threaded Stem upon which the overhang is lowered or raised, and by which the adjustment is made



# STEAM GAUGES.

## CROSBY'S IMPROVED.

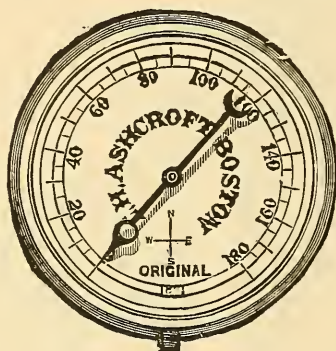
Fig. 295.



Interior View.

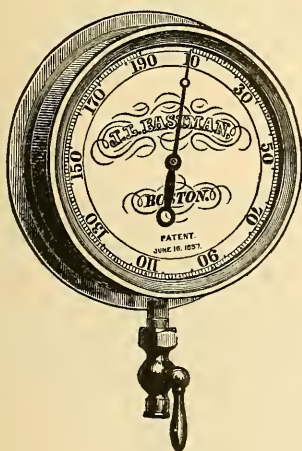
## ASHCROFT'S.

Fig. 296.



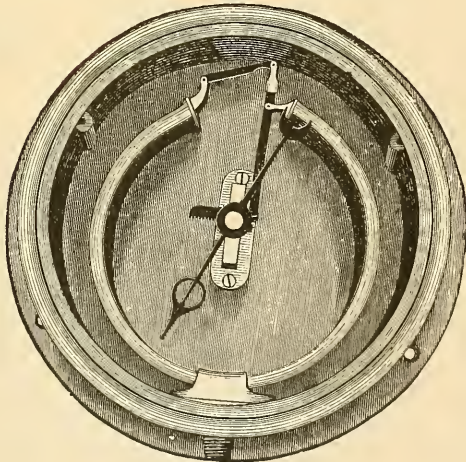
## EASTMAN'S.

Fig. 297.



## LANE'S IMPROVED.

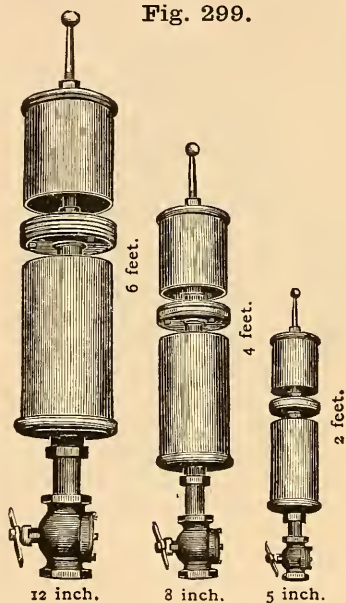
Fig. 298.





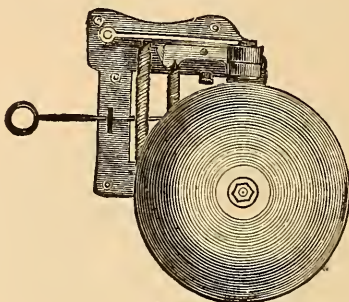
## STEAM GONGS.

Fig. 299.



## BRASS TRIP GONGS.

Fig. 300.



## GONG CRANKS.

Fig. 301.

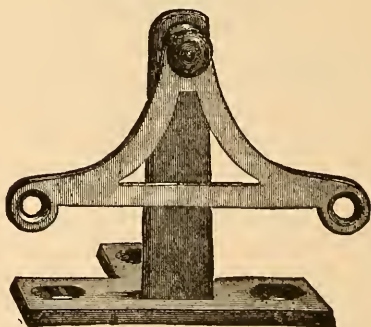
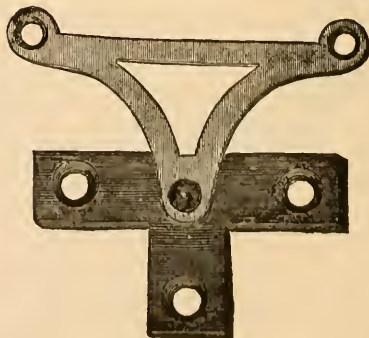


Fig. 302.



## GONG PULLS.

Fig. 303.

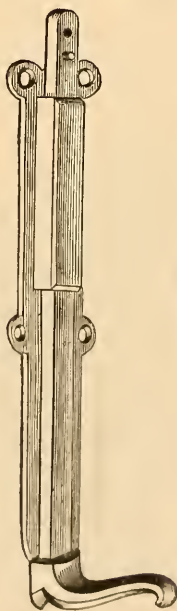
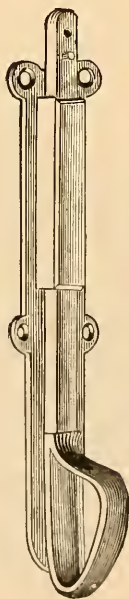
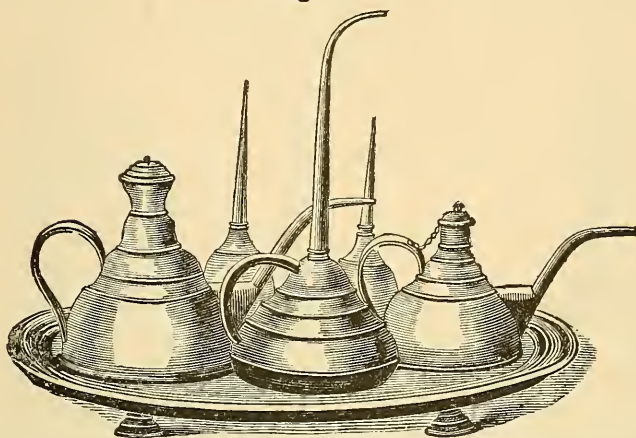


Fig. 304.



# **OILER SETS FOR STEAM ENGINE ROOMS.**

**Fig. 305.**

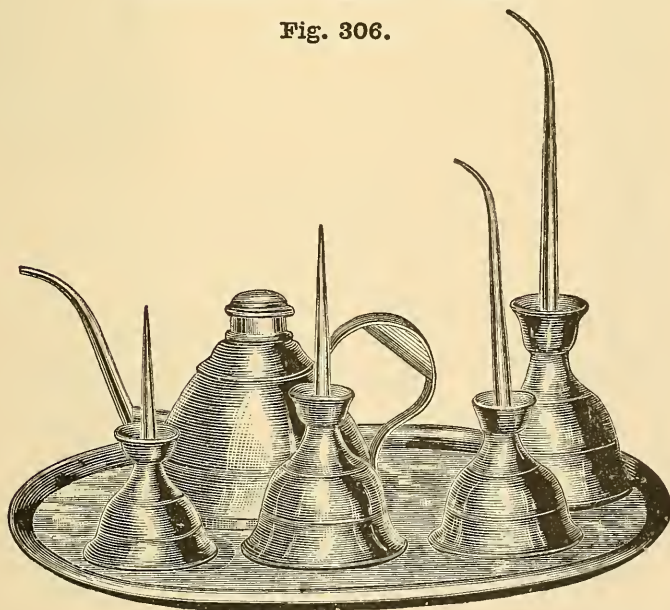


No. 1, comprising 2 oilers, with spring bottom, 1 can, all set in an oval tray.

No. 2, " 3 oilers, " " 2 cans, " " "

# **PRIOR'S OILER SETS.**

**Fig. 306.**



## OILERS.

MACHINE.

Fig. 307.

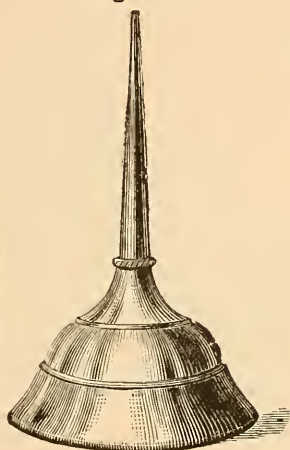
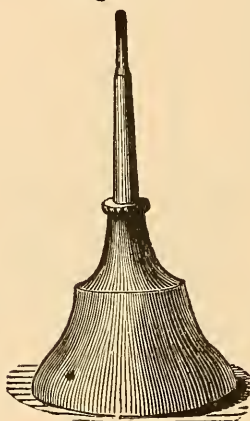
PATENT  
MALLEABLE IRON.

Fig. 309.



LOCOMOTIVE.

Fig. 308.

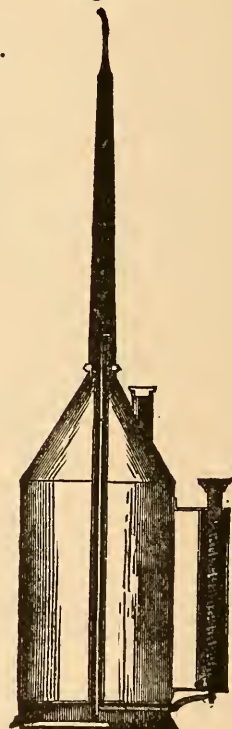
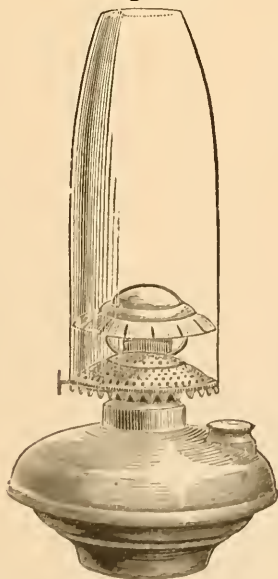
HAMMER'S PATENT  
Malleable Iron Lamps.

Fig. 310.



Malleable Iron Hand Lamps.

FOR OIL OR KEROSENE.

Fig. 311.

For Oil or Kerosene. Malleable Iron  
Founts (B size.)

Screw, Kerosene Size.

BARTLETT'S  
Crystal & Reflecting Lamp.      Cast Iron Lamp Posts.

Fig. 312.

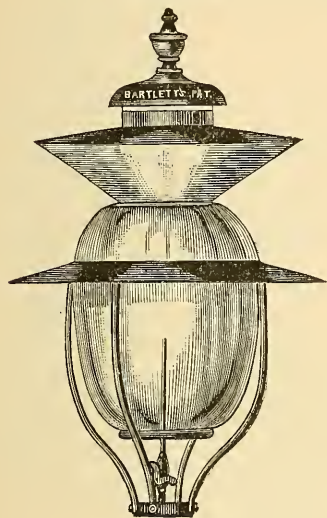
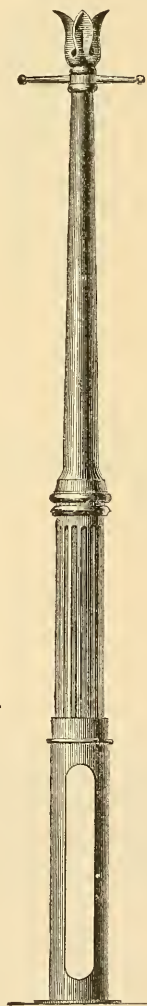
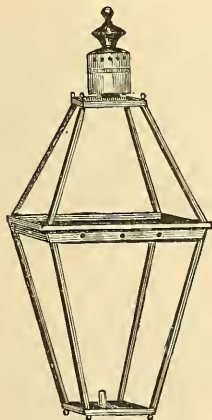


Fig. 315.



Street Lantern.

Fig. 313.



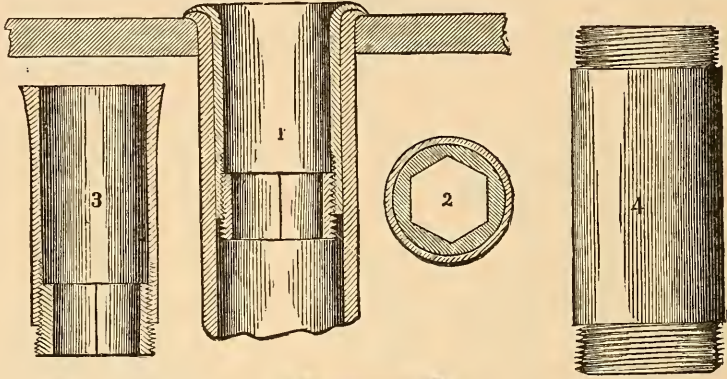
HURRICANE  
Patent Safety Lantern.

Fig. 314.

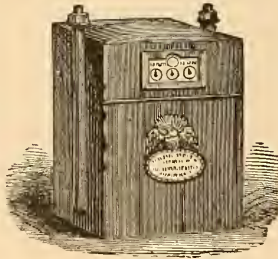




**QUINN'S DEVICE,  
FOR REPAIRING LEAKY BOILER TUBES.**  
Fig. 316.

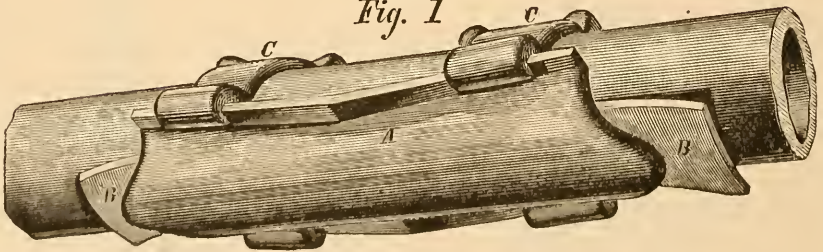


**GAS METERS.**  
Fig. 317.

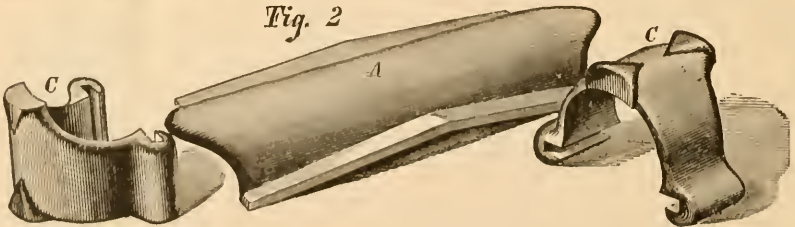


**PATENT PIPE LEAK STOPPER.**  
Fig. 318.

*Fig. 1*

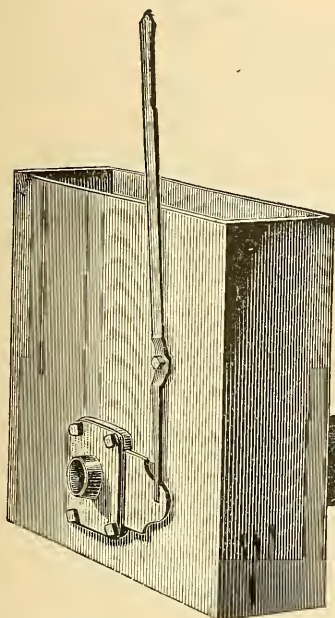


*Fig. 2*



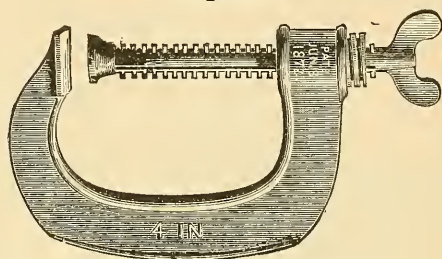
# CHAPMAN'S IMPROVED Water Back Tuyere Iron.

Fig. 319.



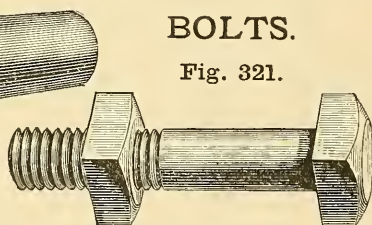
# Mall. Iron Clamp.

Fig. 320.



# BOLTS.

Fig. 321.

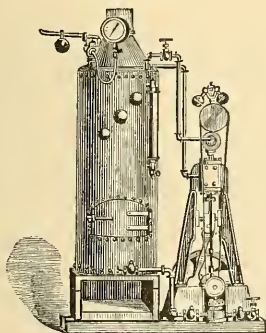


The tank connected with it runs directly out to the end of the Blast Pipe, thereby facilitating a ready circulation of water, which greatly enhances its durability.

The tank also affords a supply of *warm water* at any time, by simply removing the plug at the bottom, which also serves to draw off the water in winter to prevent freezing.

# SHEDD'S IMPROVED ENGINE.

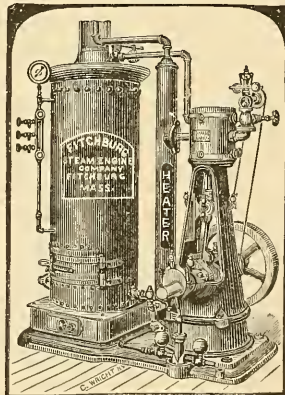
Fig. 322.



Uses but two pounds of coal per hour per horse power.

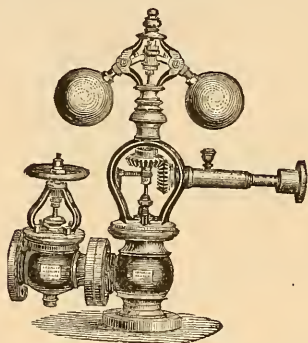
# FITCHBURG ENGINE and BOILER.

Fig. 323.



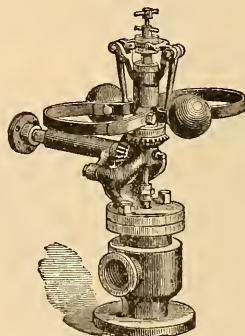
THE JUDSON PATENT  
Improved Steam Governor.

Fig. 324.



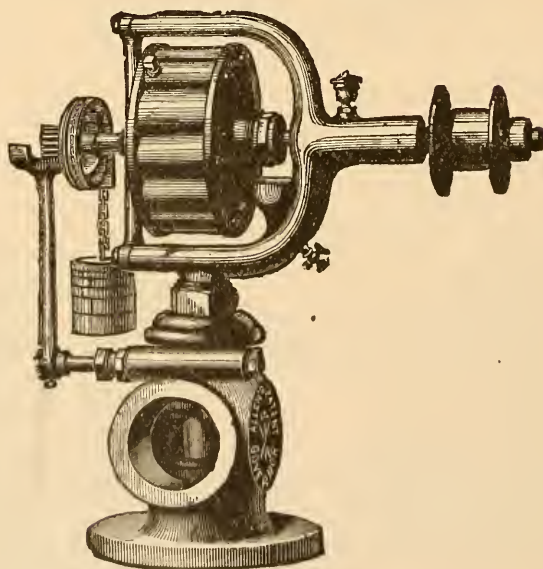
Waters' Governor.

Fig. 325.



ALLEN GOVERNOR.

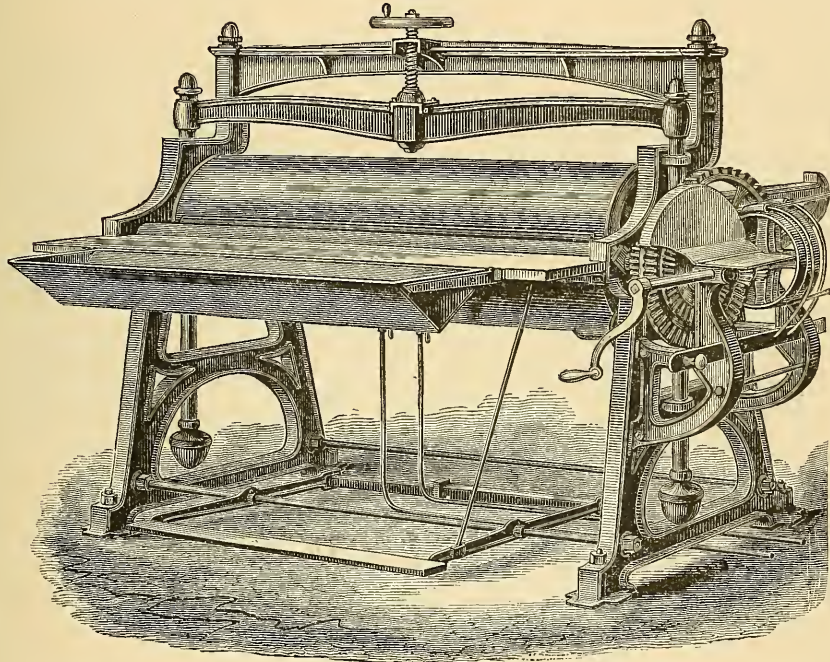
Fig. 326.





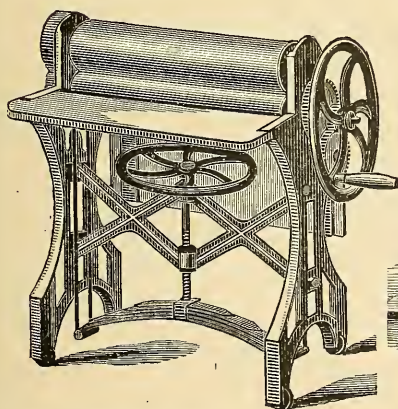
## French Ironing and Mangling Machine.

Fig. 327.



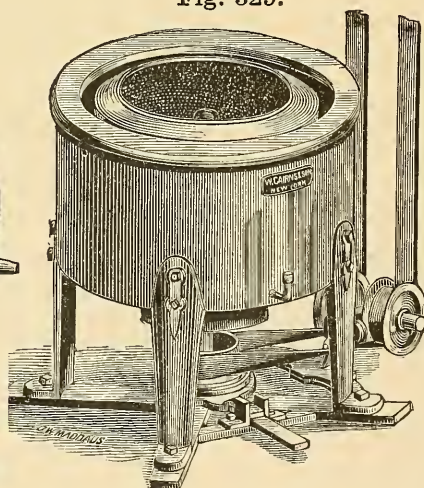
## American Mangle.

Fig. 328.



## CAIRNS' Centrifugal Extractors.

Fig. 329.

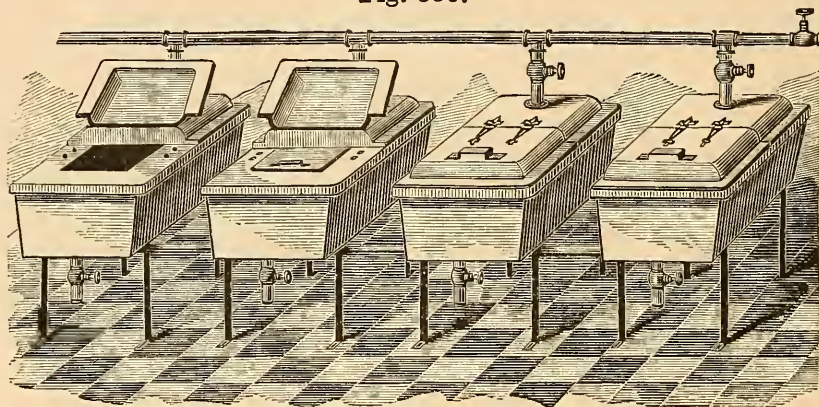




## ASHCROFT'S PATENT STEAM OVENS.

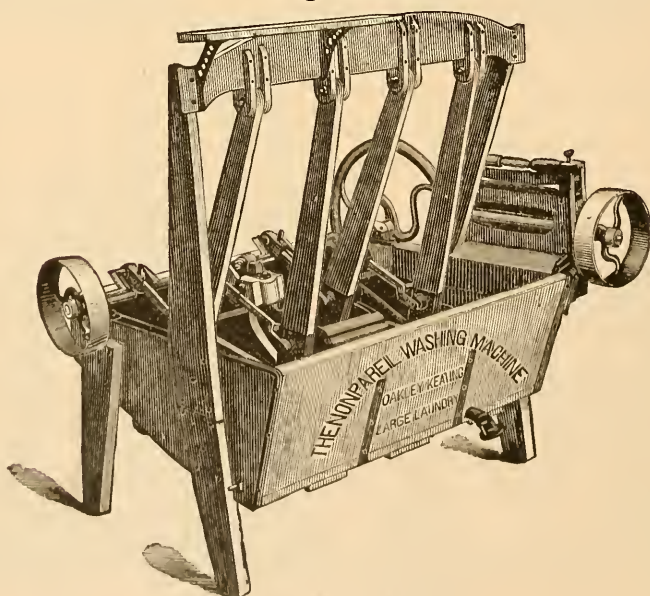
For roasting all kinds of Meats without loss in weight.

Fig. 330.



## THE NONPAREIL "LAUNDRY" WASHING MACHINE.

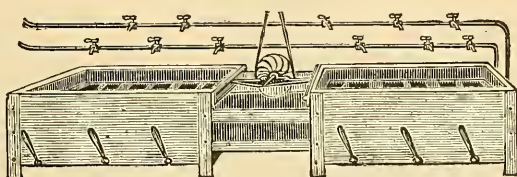
Fig. 331.



Counter Shaft not shown.

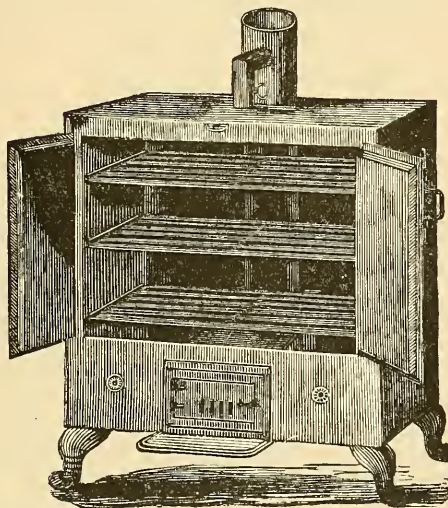
## IMPROVED SHAKER WASHING MACHINE.

Fig. 332.



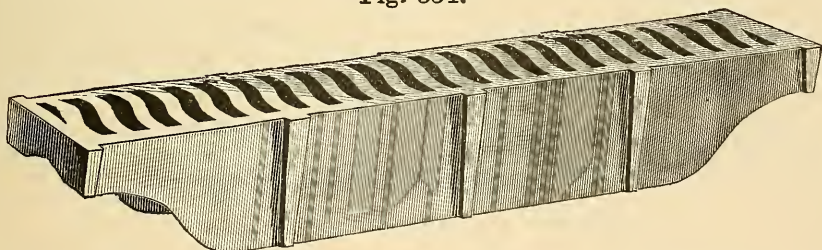
## GALVANIZED PORTABLE OVEN.

Fig. 333.



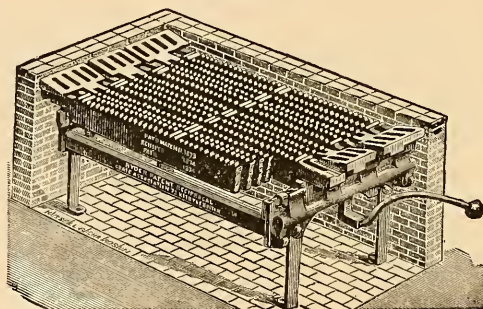
## SMITH'S PATENT IMPROVED GRATE BAR.

Fig. 334.



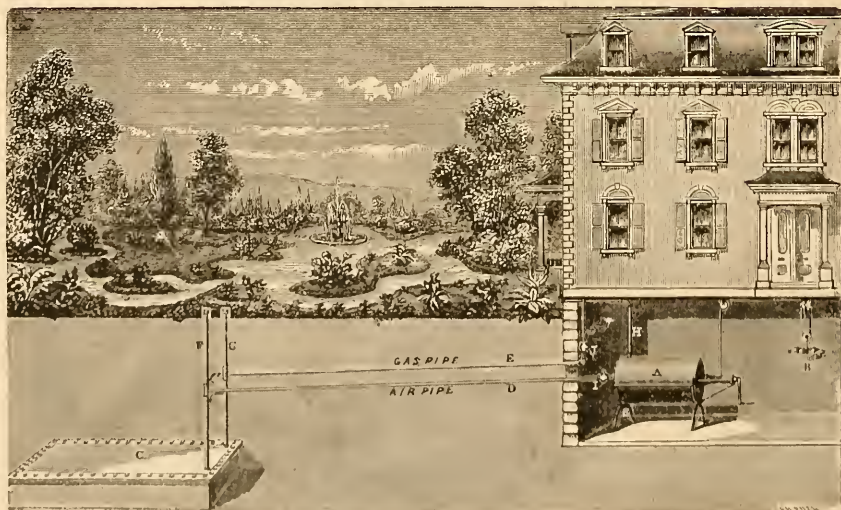
## RYDER'S RECIPROCAL GRATE BARS.

Fig. 335.



## GAS GENERATORS, FOR LIGHTING DWELLING HOUSES.

Fig. 336.

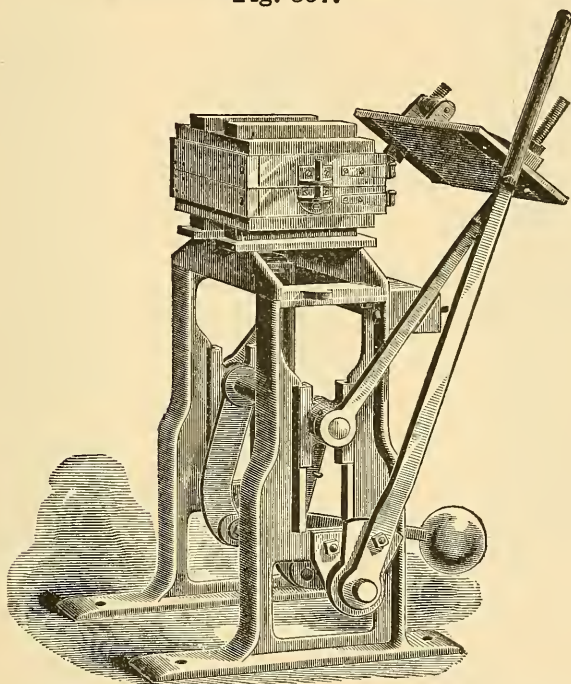


The best Apparatus for making Gas from Gasoline now in use.



**T. F. HAMMER'S PATENT NEW AND IMPROVED  
FOUNDRY MOULDING MACHINE,  
FOR IRON AND BRASS CASTINGS.**

Fig. 337.



ROUND SLIDE

**HOT AIR REGISTERS. LEVER REGISTERS.**

Fig. 338.



This is the ordinary Floor Register. The Star Fixture adapts it to the wall, when cords may be attached if desired.

Fig. 339.



Arranged to receive, if wanted, the Star or Cord Fixtures.

Spiral Locked      Black and Galvanized      Galvanized Wrought  
 SEAMED PIPE.      Sheet Iron Pipe.      RIVETED PIPE

Fig. 340.



Manufactured of Black and Galvanized Sheet Iron, Tin, Copper, Zinc and Brass. Specially adapted for use as House Leaders, Ventilating Pipes, Speaking Tubes, Stove Pipe, &c.

Fig. 341.



Suitable for use as Smoke Stacks, Blower, Ventilator, Air Pipes, &c.

Fig. 342.



Fitted with Cast-Iron Flange Connection, suitable for use as Exhaust Steam and Blow-off Pipe, Pump Suction, Air Compressor, Water Pipe, &c. Manufactured in lengths of 10 to 15 feet, and tested to Hydraulic Pressure of 150 lbs.

Galvanized Cast Iron Flanged  
 Elbows & Tees.

Fig. 343.



Fig. 344.



Corrugated, Adjustable and  
 Lobster-Back

ELBOWS.

Fig. 345.



Fig. 346.



Black and Galvanized  
 Leader Hooks.

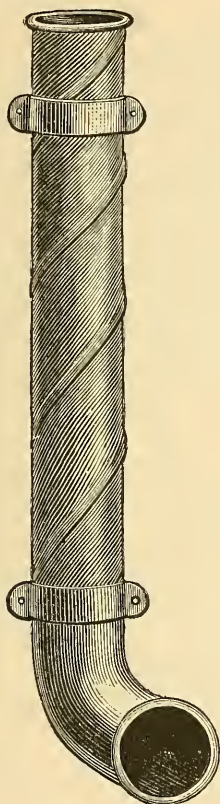
Fig. 347.



Wrought Iron.

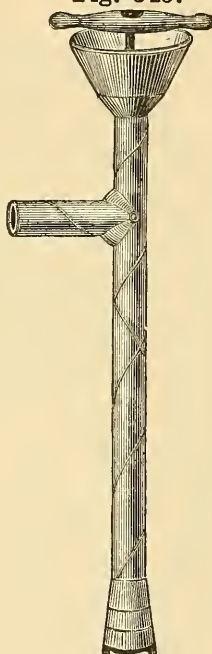
CAST IRON  
Leader Pipe or Shoes.

Fig. 348.



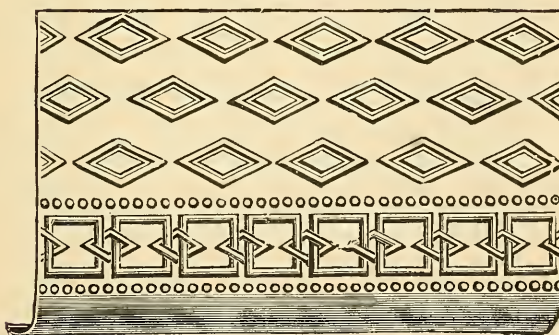
Galvanized Wrought Iron Hand  
Suction or Bilge Pumps.

Fig. 349.



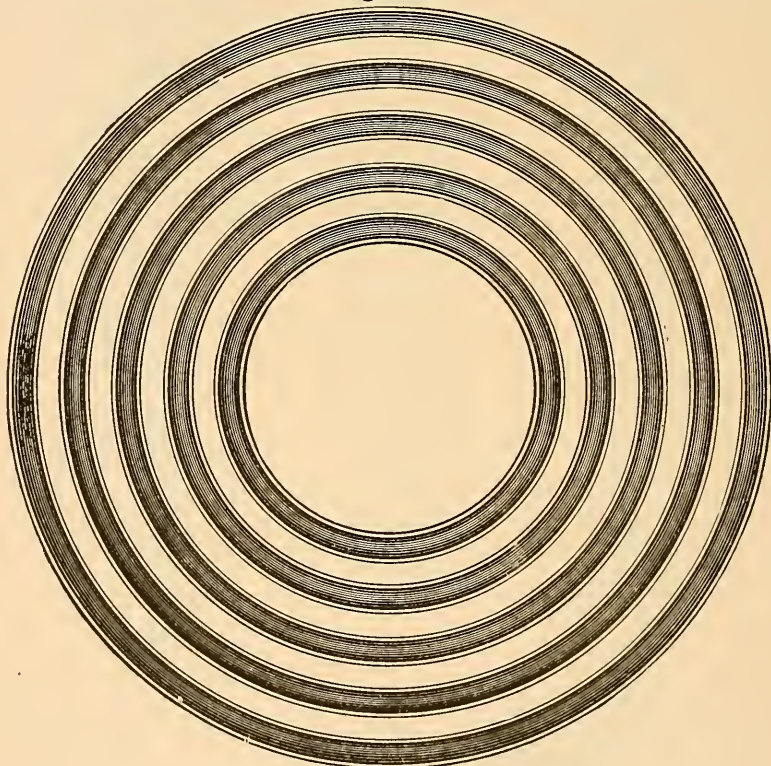
BRASS STAIR PLATES.

Fig. 350.





**SAUNDERS' PATENT  
METALLIC CORRUGATED PACKING,**  
For Steam, Air, Gas, or Water Joints, and all kinds of Union Coupling.  
**Fig. 351.**



Cuts show Gaskets as sold ready for use, from  $\frac{1}{4}$  to 17 in.

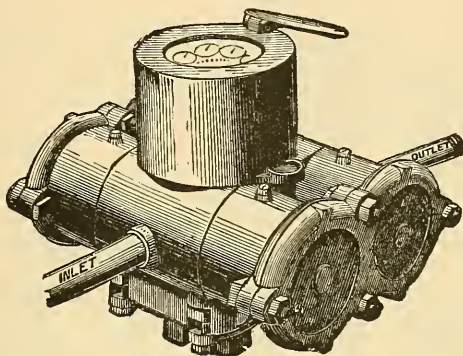


Cuts show the Corrugated  
Wire Packing, as sold  
in bundles.



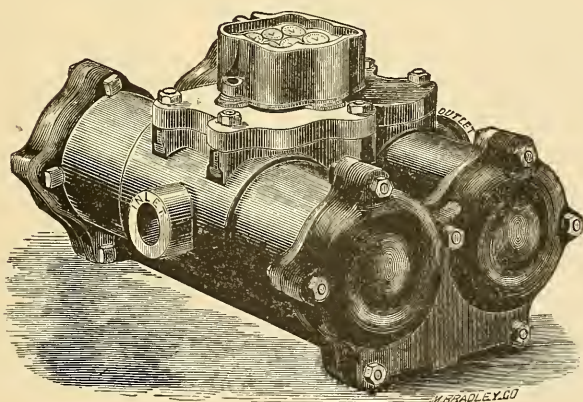
## WORTHINGTON'S WATER METER.

Fig. 352.



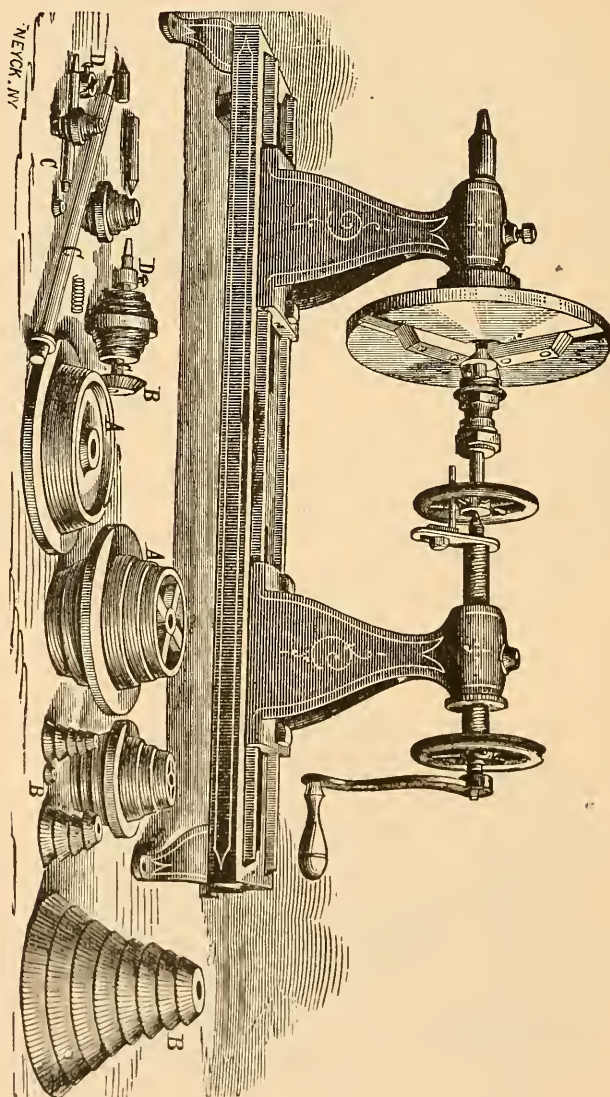
## UNION WATER METER.

Fig. 353.



HALL'S  
PATENT VALVE REFITTING MACHINES.

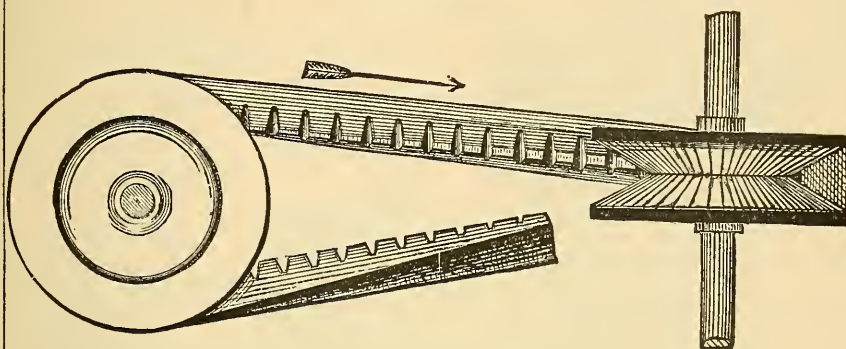
Fig. 354.





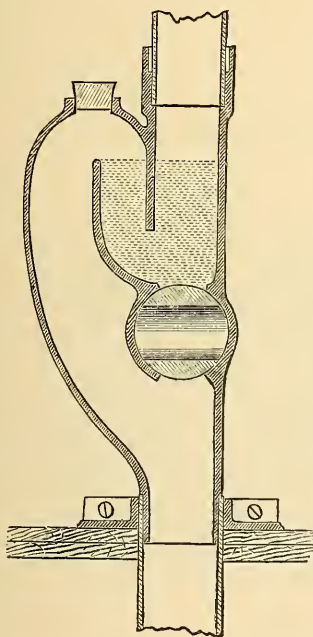
## ANGULAR or V BELTING.

Fig. 355.



## STILLSON'S STENCH TRAP.

Fig. 356.

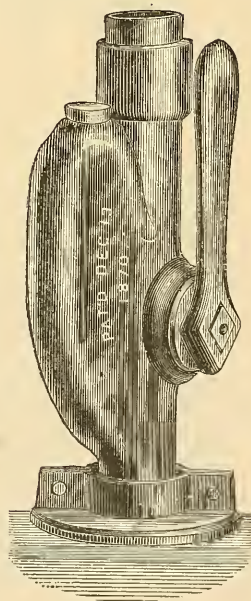


They are made of Cast Iron, Japanned or Galvanized.

The Plug is Rabbitted so that they are perfectly water-tight, and will not corrode. It requires no soldering, as the bottom end is made in form of a tunnel with screw thread.

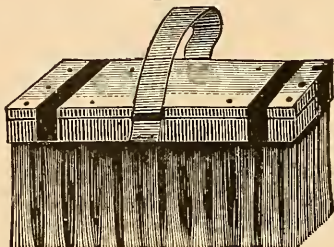
It is cheap and durable, and will stop all stench in any building arising from drains or sewers.

It can be put in Lead or Iron Pipe by anyone.



## STEEL CASTING BRUSHES.

Fig. 357.



For Cleaning Castings.

Fig. 358.



Steel Wire Broom.

Fig. 359.



Boiler Brooms.

Fig. 360.

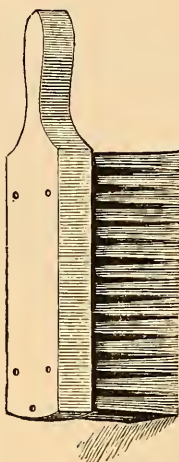


Fig. 361.



## STATIONARY WASH STANDS.

Fig. 362.

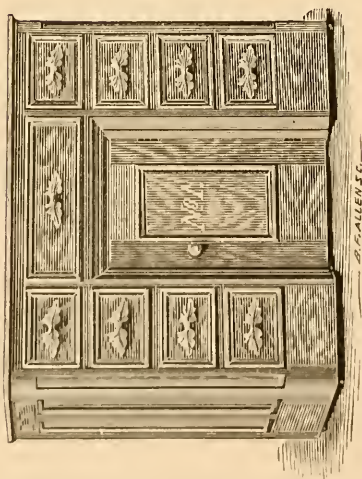
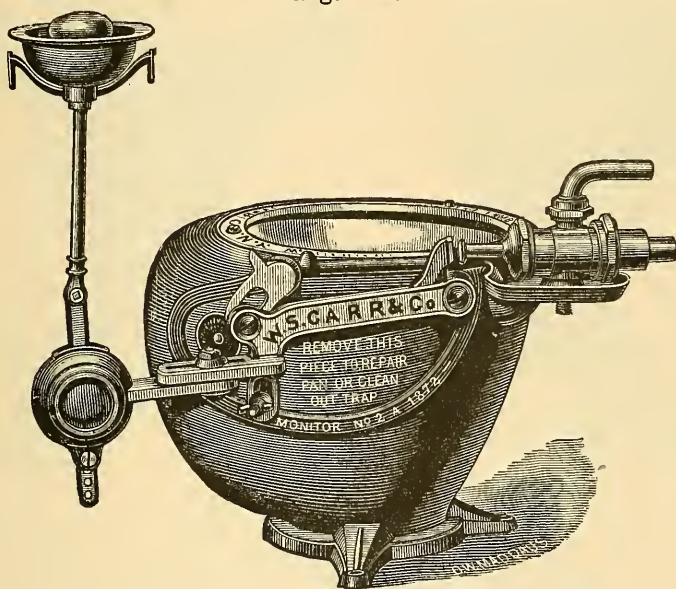


Fig. 363.



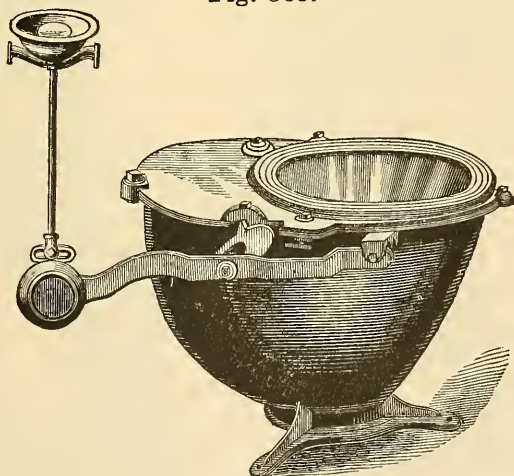
MONITOR VALVE CLOSET,  
WITH REMOVABLE SECTION.

Fig. 364.



PAN WATER CLOSET,

Fig. 365.



TO BE USED WITH A CISTERN OVERHEAD.



## HOSPITAL HOPPER CLOSET.

HEIGHT, 17 INCHES.

Fig. 366.

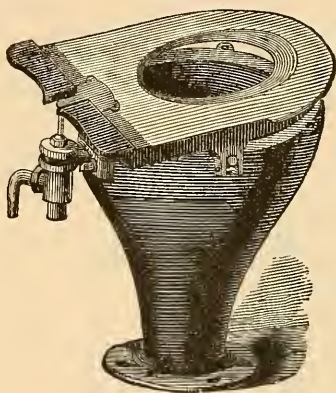
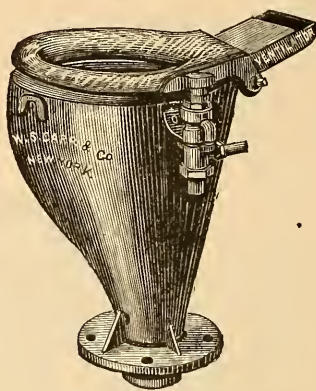


Fig. 367.



With Ventilation Pipe.

Single Acting Hopper Valve.

Fig. 368.

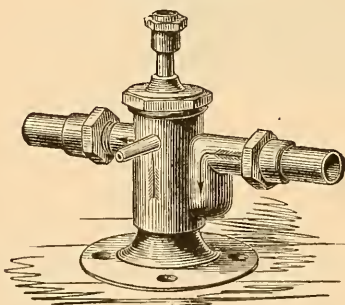
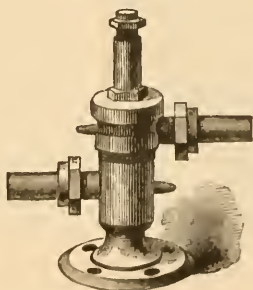
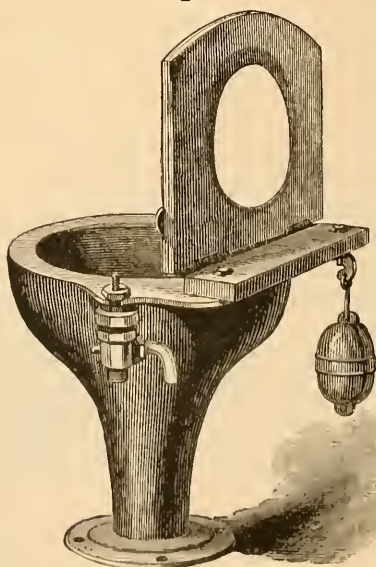
Water Waste Preventor  
Valve.

Fig. 369.



HOPPER and URINAL.

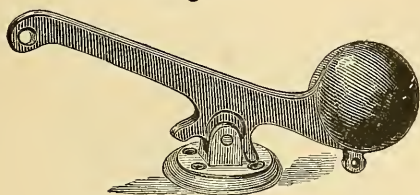
Fig. 370.



With Self-Raising Seats.

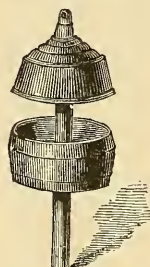
# Ball Lever.

Fig. 371.



# Cistern Valve.

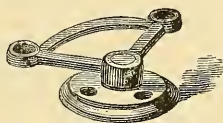
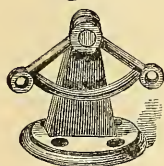
Fig. 372.



# Horizontal and Upright Crank.

Fig. 373.

Fig. 374.



# Sink Plugs.

Fig. 375.



# Philadelphia Hopper.

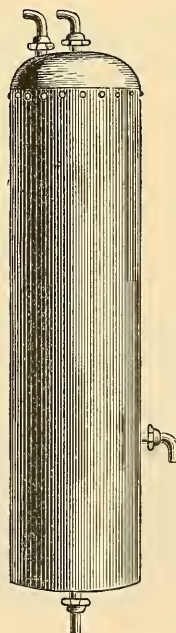
Fig. 376.



4 inch Outlet.

# Copper Boiler.

Fig. 378.



# Copper Ball.

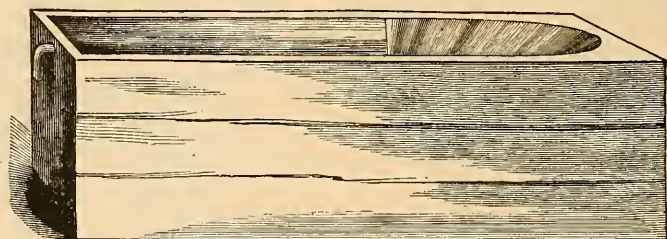
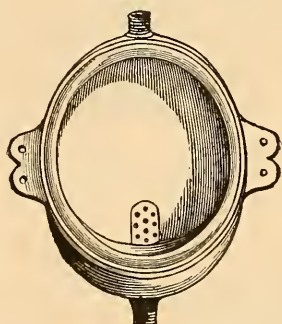
Fig. 377.



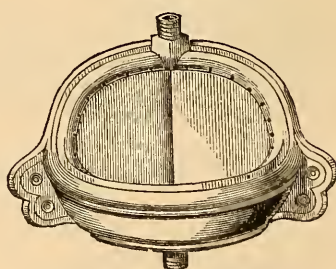
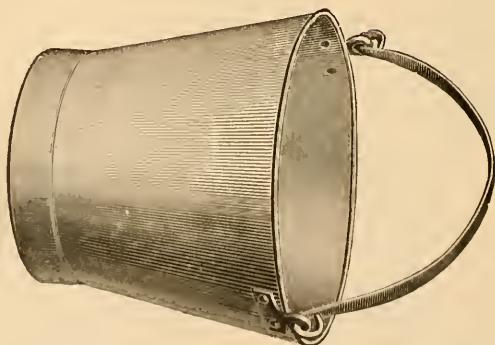
(Tinned.)

**COPPER BATH TUBS.**

5 feet 6 inches, or 6 feet long.

**Fig. 379.****BEDFORDSHIRE URINALS.****Fig. 380.**

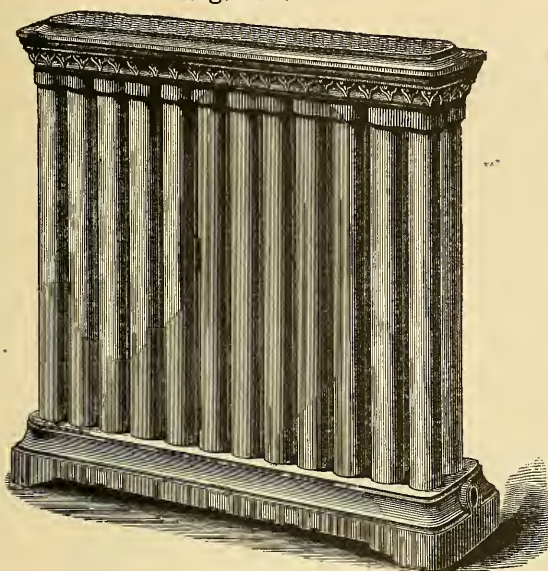
Large and small.

**Fig. 381.****Galvanized Stable, Fire, or Factory Buckets.****Fig. 382.**



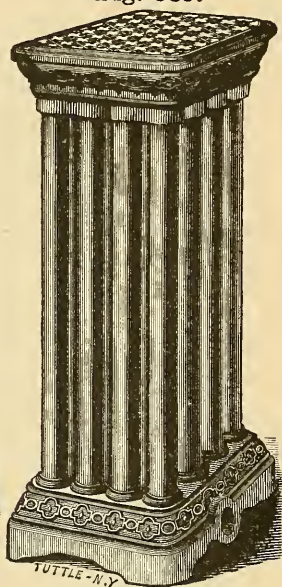
# RADIATORS.

Fig. 383.



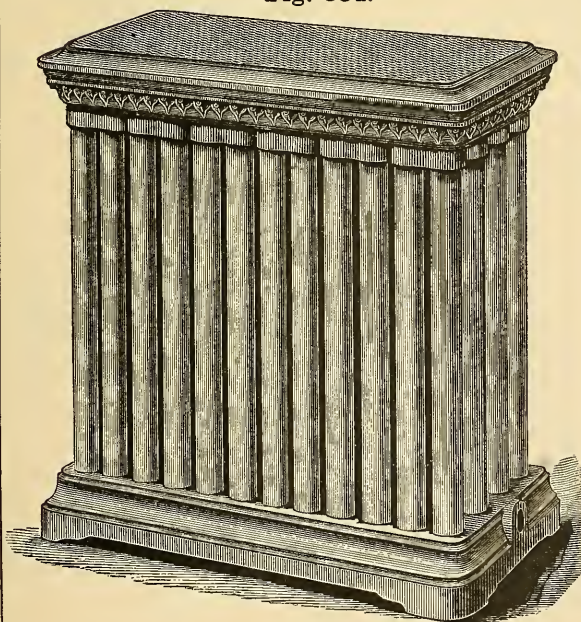
2 x 12 Pipes.

Fig. 385.



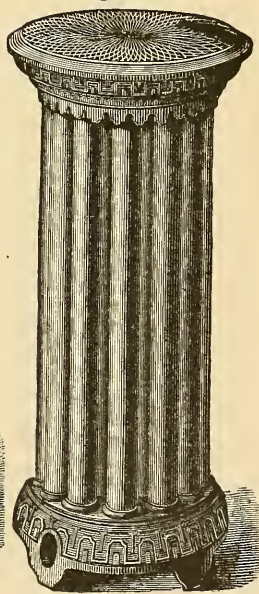
4 x 4 Pipes.

Fig. 384.



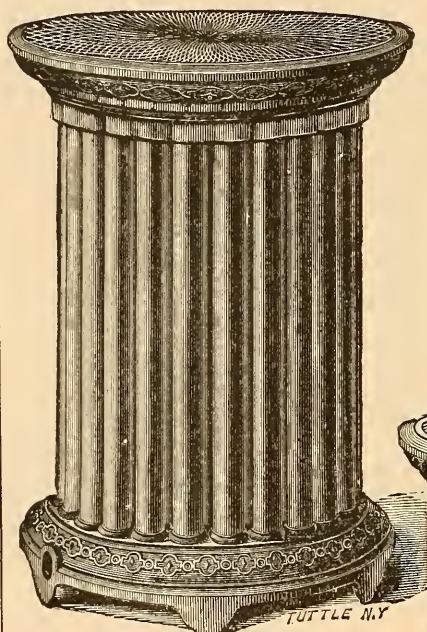
4 x 12 Pipes.

Fig. 386.



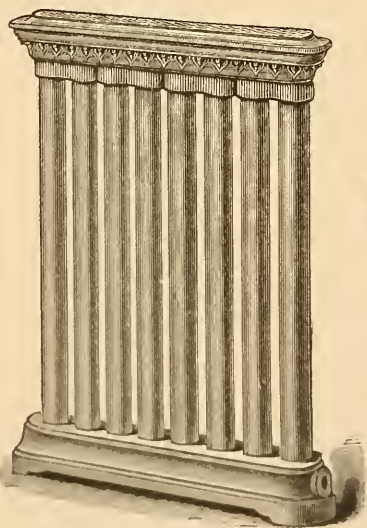
No. 1 Circular, 18 Pipes.

Fig. 387.



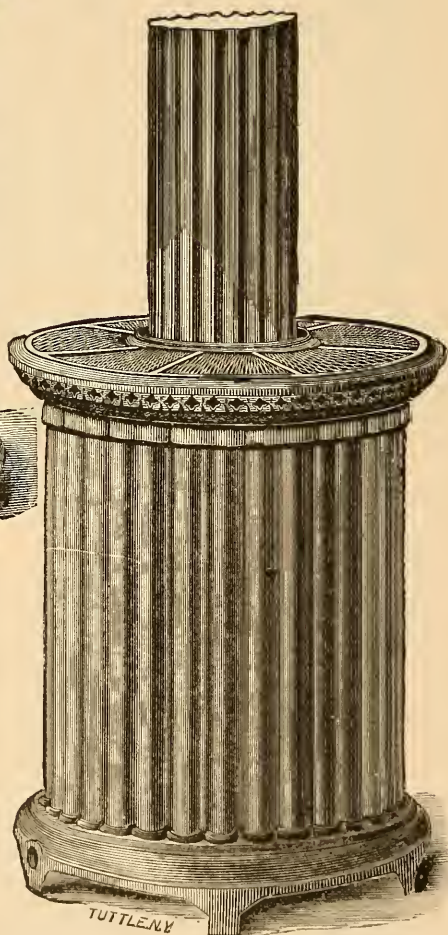
No. 3 Circular, 54 Pipes.

Fig. 388.



1 x 8 Pipes.

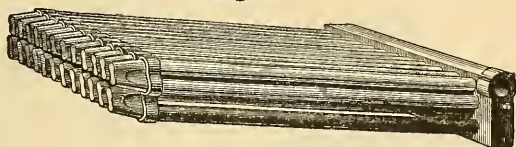
Fig. 389.

Column Radiator, in halves to encircle Columns.  
Five Sizes.



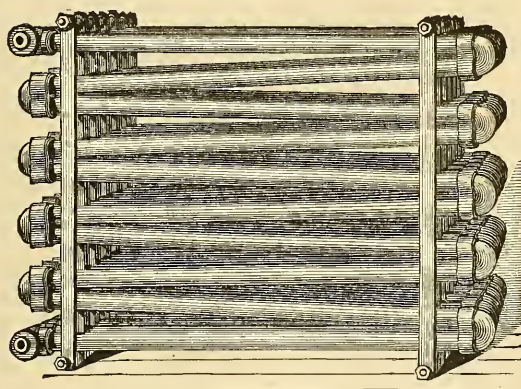
## INDIRECT RADIATORS.

Fig. 390.



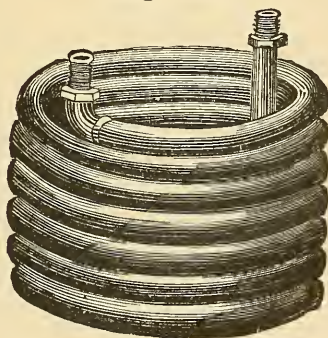
## BOX COILS.

Fig. 391.

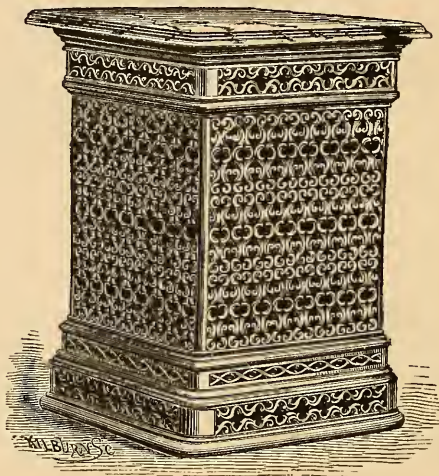


## CIRCULAR COILS of WROUGHT IRON PIPE.

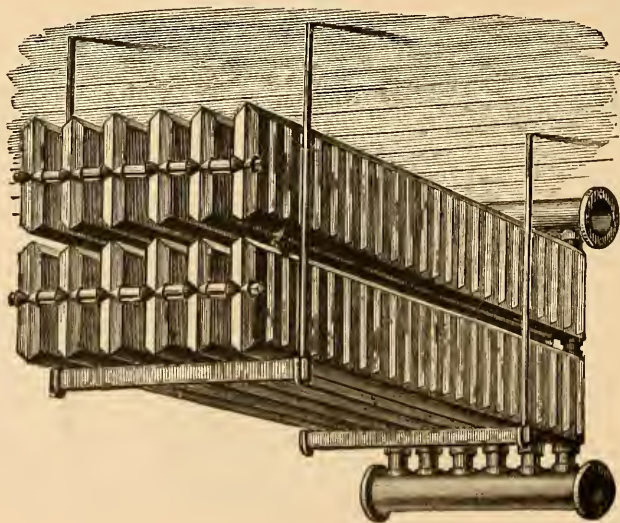
Fig. 392.





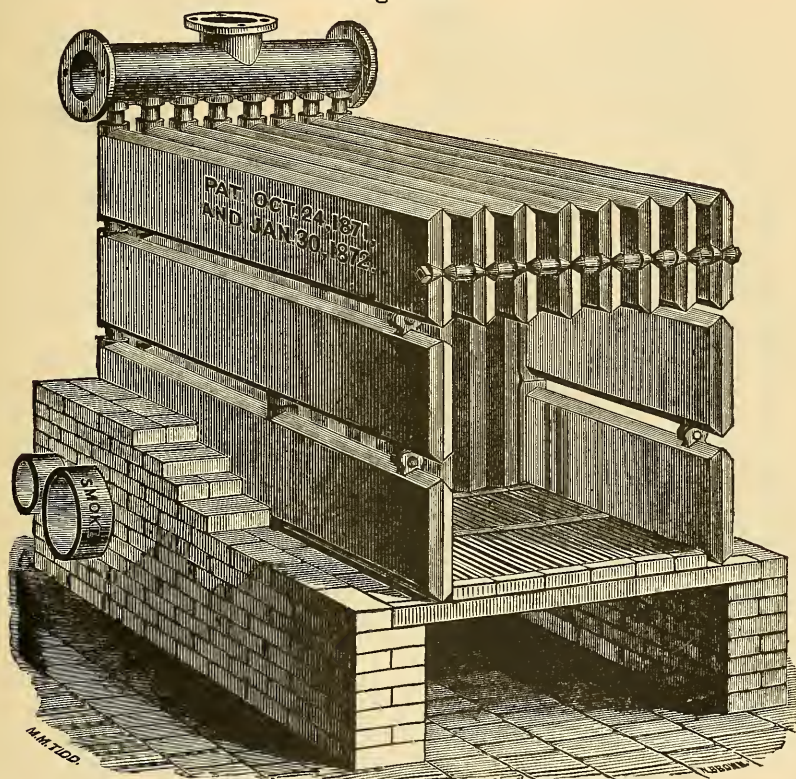
**ORNAMENTAL SCREENS.****Fig. 393.**

Sizes made to order, 31, 37 and 43 inches high.

**CLAY'S PATENT HOT WATER RADIATOR.****Fig. 394.**

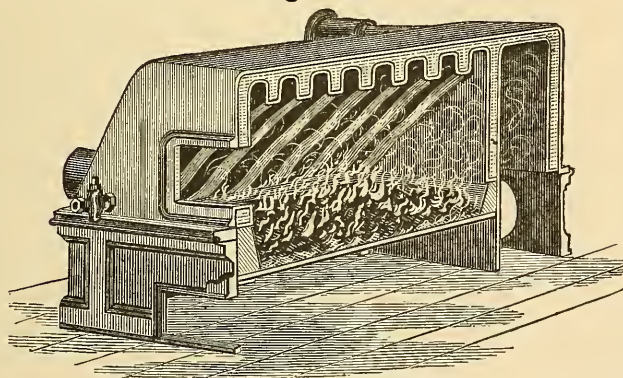
# CLAY'S PATENT BOILER.

Fig. 395.

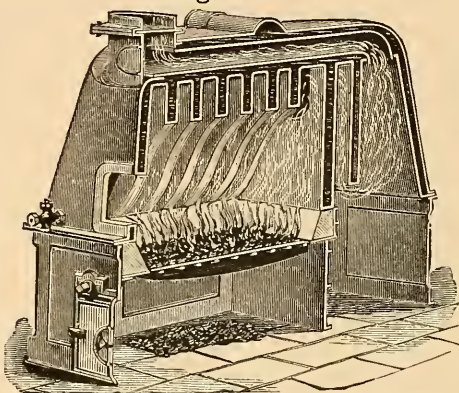
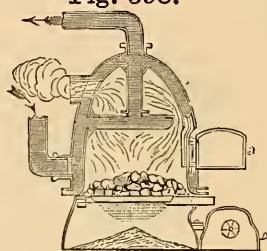
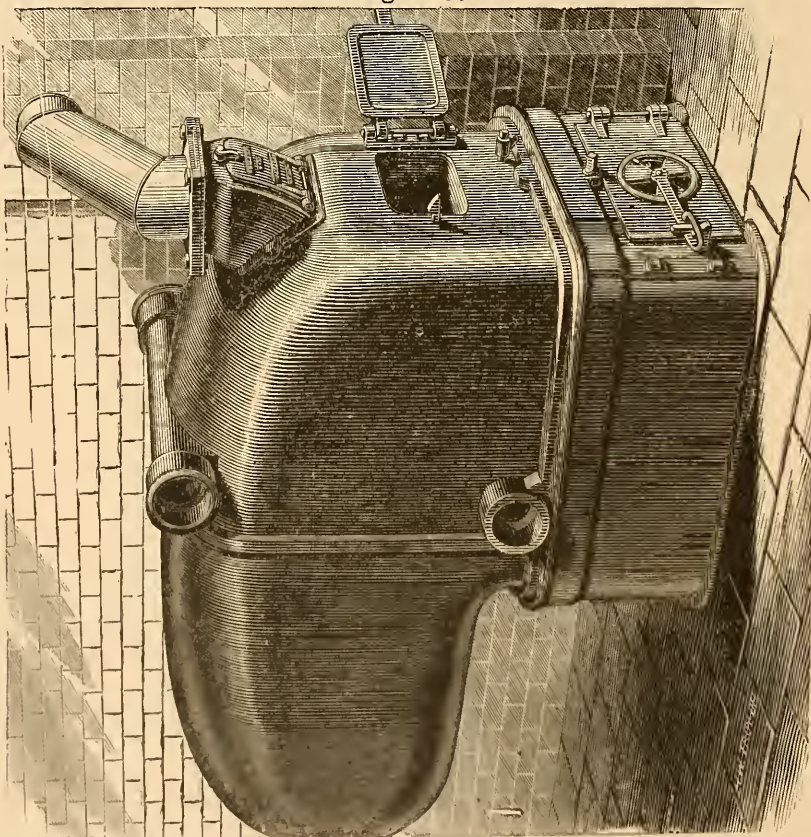


# Smith & Lynch's Base Burner Boiler.

Fig. 396.



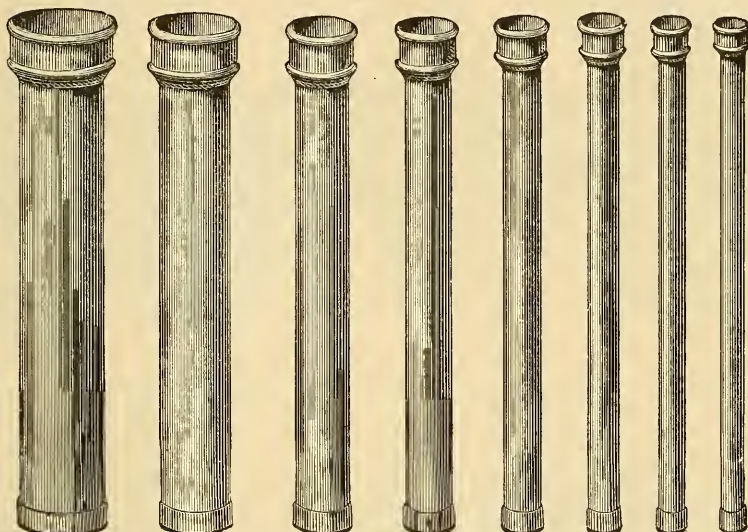


**S. & L's Return Flue Boiler.****Fig. 397.****Weathered's Boiler.****Fig. 398.****Hitchings' Corrugated Fire Box Boiler.****Fig. 399.**



# CAST IRON SOCKET PIPE.

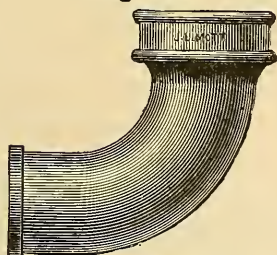
Fig. 400.



## FITTINGS FOR SOCKET PIPE.

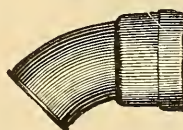
Quarter Bends.

Fig. 401.



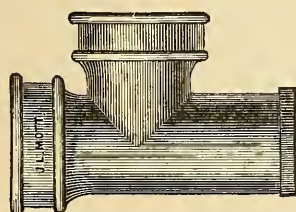
Eighth Bends.

Fig. 402.



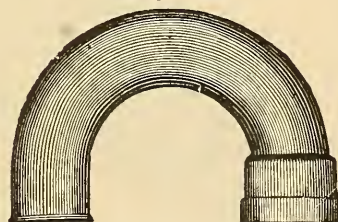
Tees.

Fig. 403.



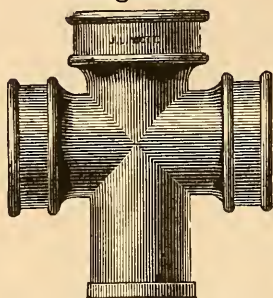
Return Bends.

Fig. 404.



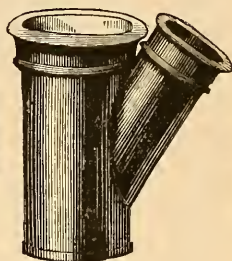
Cross.

Fig. 405.



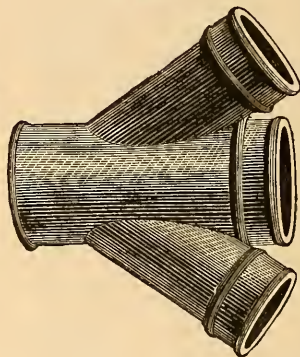
Y Branches.

Fig. 406.



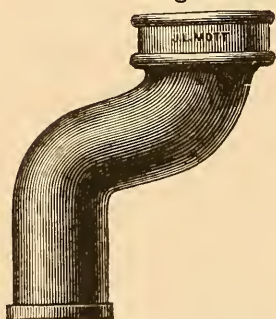
Double Y Branches.

Fig. 407.



Offsets.

Fig. 408.



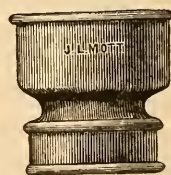
Double Hubs.

Fig. 409.



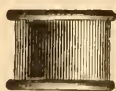
Reducing Pieces.

Fig. 410.



Straight Sleeves.

Fig. 411.



Single Hubs.

Fig. 412.



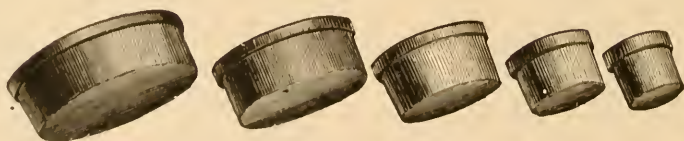
Saddle Hubs.

Fig. 413.



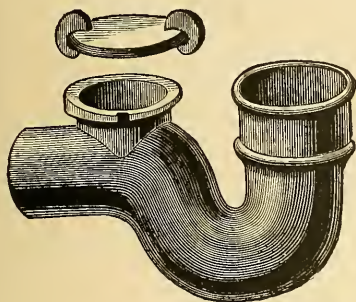
Pipe Stoppers or Plugs.

Fig. 414.



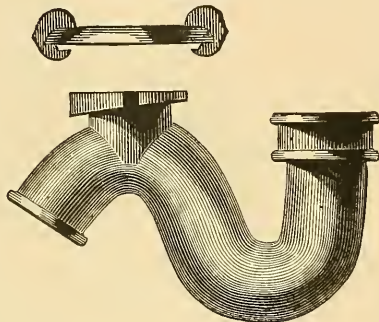
Half S Trap.

Fig. 415.



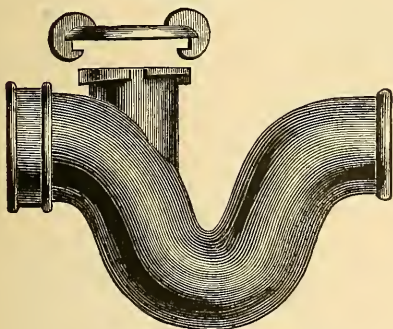
3-4 S Trap.

Fig. 416.



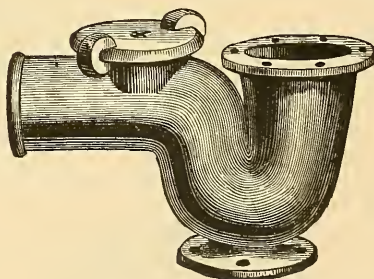
Running Trap.

Fig. 417.



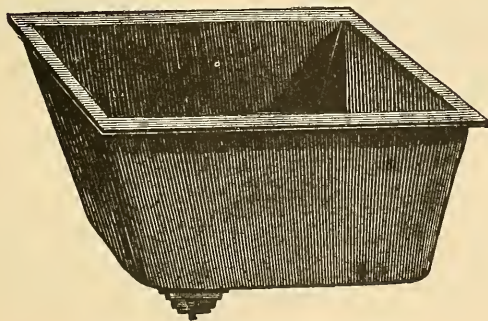
Half S Hopper Trap.

Fig. 418.



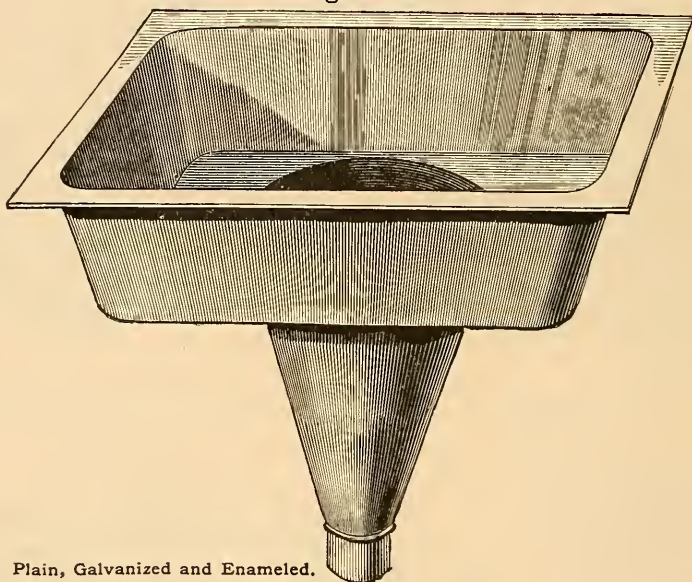
## SLOP SINK.

Fig. 419.



Plain, Galvanized and Enameled.

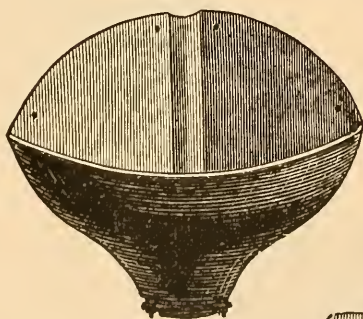


**SLOP SINK, with Hopper Attached.****Fig. 420.**

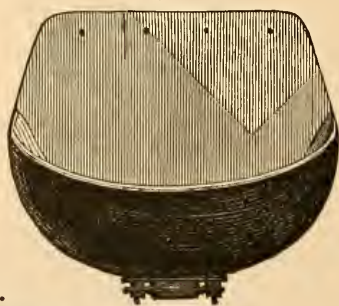
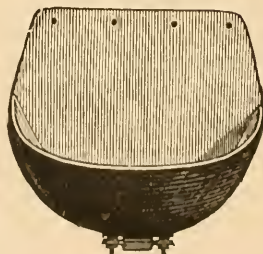
Plain, Galvanized and Enameled.

**Corner Urinal.**

With Opening behind for Lead Pipe.

**Fig. 421.**12 in. on side. Plain, Painted,  
Galvanized and Enameled.**Half Circle Urinals.**

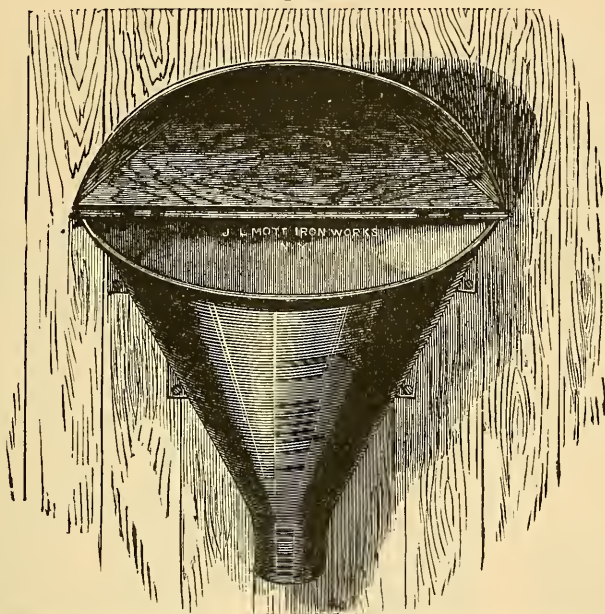
No. 2, length on back 15 in.

**Fig. 422.****Fig. 423.**

No. 1, length on back 12 in.

**SLOP HOPPER,**  
FOR HOTELS, PUBLIC INSTITUTIONS, &c.

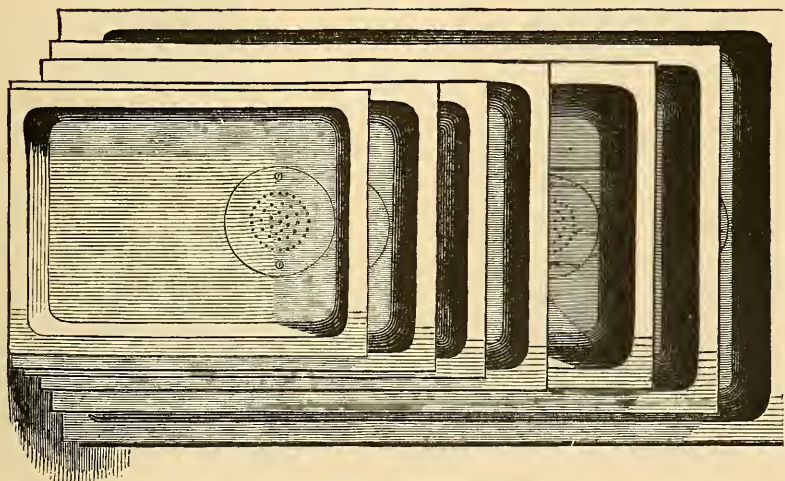
Fig. 424.



Length on back, 21 inches. Width, 12½ in. Depth, 18 in. Outlet, 3 in.

**SQUARE SINKS.**

Fig. 425.



Plain, Galvanized and Enameled.

## SPECIAL GREENHOUSE FITTINGS.

Double Hub Elbow. Tee, 3 Hubs. Double Hub Return Bend.

Fig. 426.

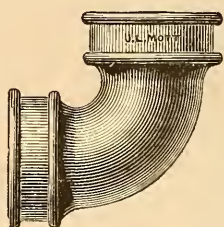


Fig. 427.

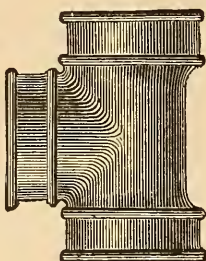
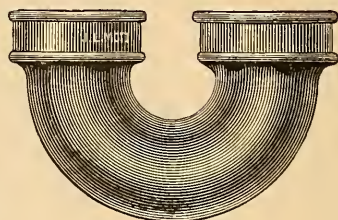
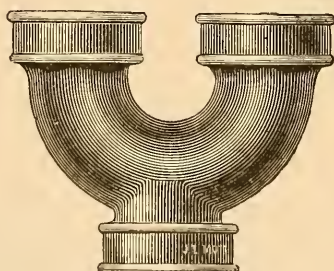


Fig. 428.



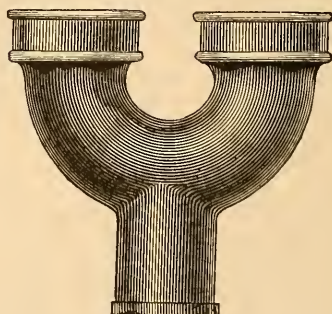
Return Bend with Hub Outlet.

Fig. 429.



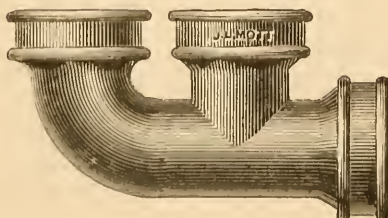
Return Bend, Spigot Outlet.

Fig. 430.



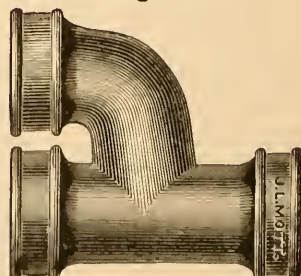
Double Elbow.

Fig. 431.



H Branch.

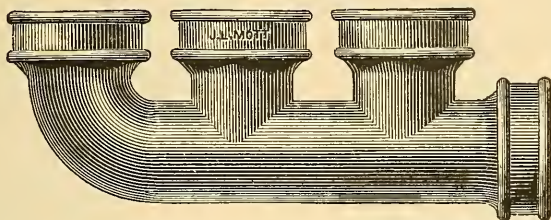
Fig. 432.





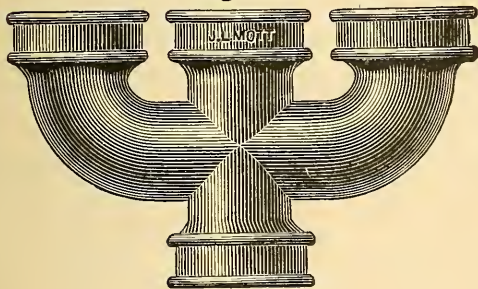
Triple Elbow.

Fig. 433.



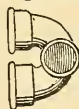
Three-Way Branch, with Hub Outlet.

Fig. 434.



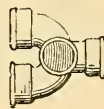
Return Bend,  
with Expansion.

Fig. 435.



Return Bend  
B. O. with Expansion.

Fig. 436.



Return Bend Spigot, 3 Branch Pipe,  
B. O. Socket.

Fig. 437.



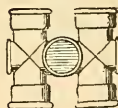
3 Branch Pipe,  
with Expansion.

Fig. 438.



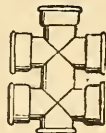
H Fitting,  
with Expansion.

Fig. 439.



H Fitting,  
with End O.

Fig. 440.



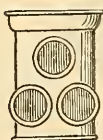
Double 3 Branch Pipe,  
with Expansion.

Fig. 441.



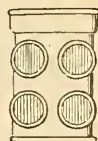
Tank,  
with three Outlets.

Fig. 442.



Tank,  
with four Outlets.

Fig. 443.



Stand Pipe, Plain.

Fig. 444.



Stand Pipe, Gothic.

Fig. 445.



Register.

Fig. 446.



Wing Valve.

Fig. 447.

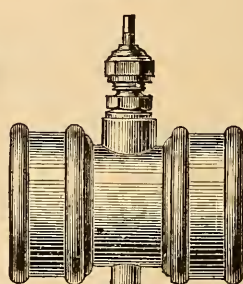
Single Roller Plate and  
Pipe Roll.

Fig. 448.



Pipe Chair.

Fig. 449.



Pipe Saddle, Single.

Fig. 450.



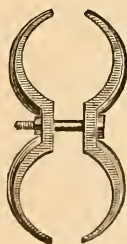
Pipe Saddle, Triple.

Fig. 451.



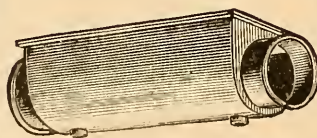
Pipe Clamps,

Fig. 452.



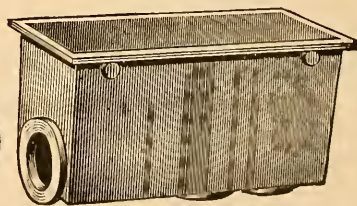
Vapor Pan.

Fig. 453.



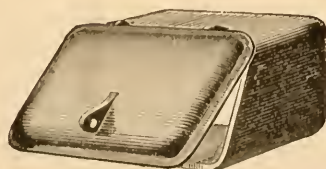
Expansion Tank.

Fig. 454.



Air Trunk.

Fig. 455.



Two Sizes, 8 x 8 in., 8 x 12 in.

Door and Frame.

Fig. 456.

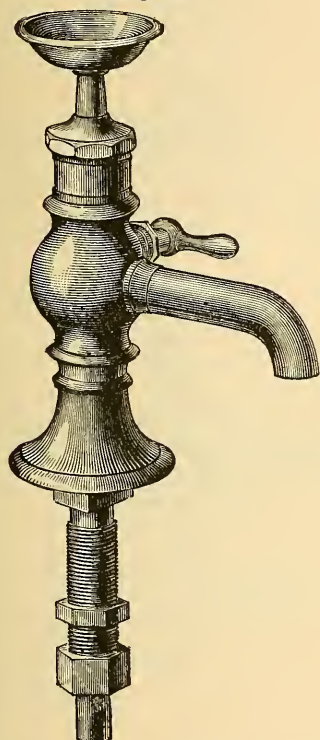


Door 14 x 20 inches.

WALWORTH'S  
SELF-CLOSING BASIN COCKS, &c.

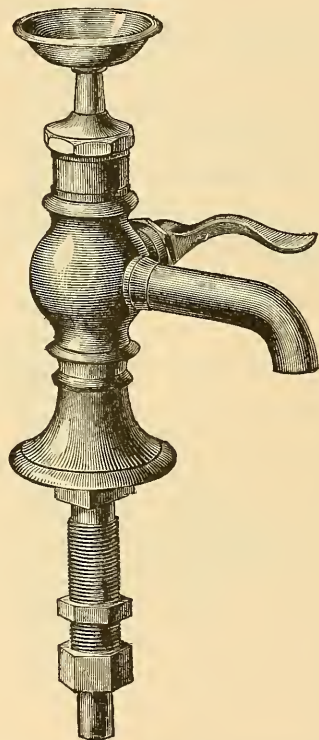
Lever Handle, Basin Cock.

Fig. 457.



T Handle (on side).

Fig. 458.



S. C. Plain Bibb for Iron Pipe. S. C. Plain Bibb for Lead Pipe.

Fig. 459.

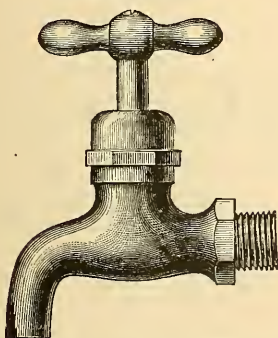
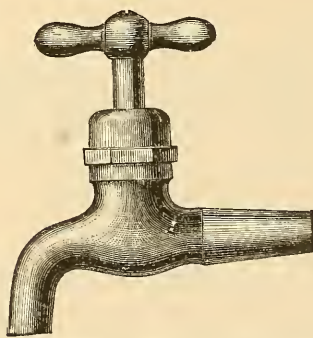


Fig. 460.





T Handle (on top).

Fig. 461.

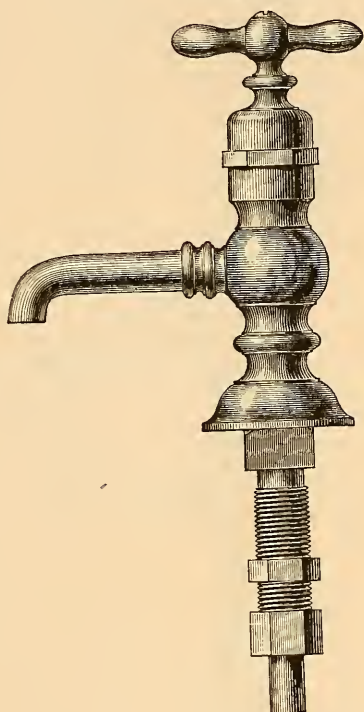
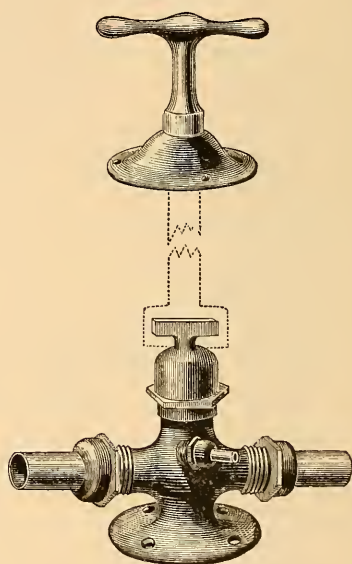
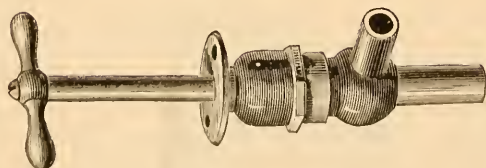
Stop and Waste Valve,  
with Finished Plate and Handle.

Fig. 462.



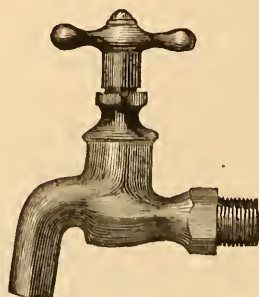
Self-Closing Hopper Cock.

Fig. 463.



Zane's Self-Closing Bibbs.

Fig. 464.

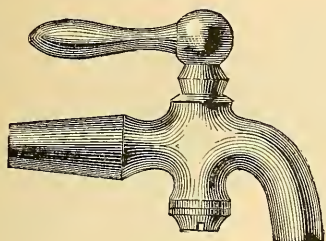


Screwed Ends for Iron Pipe.

# WATER WORK.

## Plumbers' Bibb Cocks.

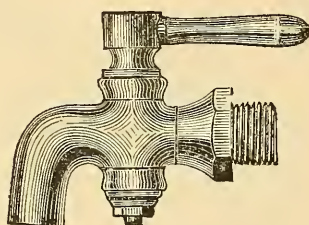
Fig. 465.



Finished.

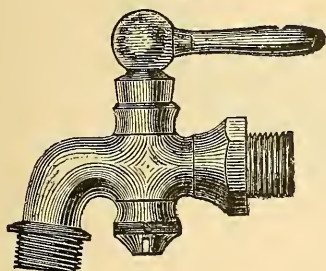
## Plain Bibb Cocks.

Fig. 466.



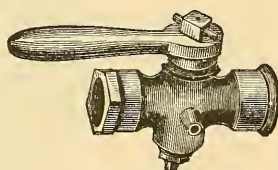
## Hose Bibb Cocks.

Fig. 467.



## Stop and Waste. (Iron Pipe.)

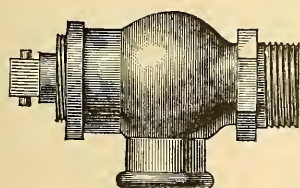
Fig. 468.



Rough.

## Compression Ball Cocks.

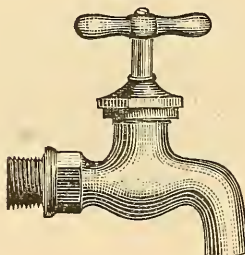
Fig. 469.



Screwed End for Iron Pipe.

## Compression Bibb Cocks.

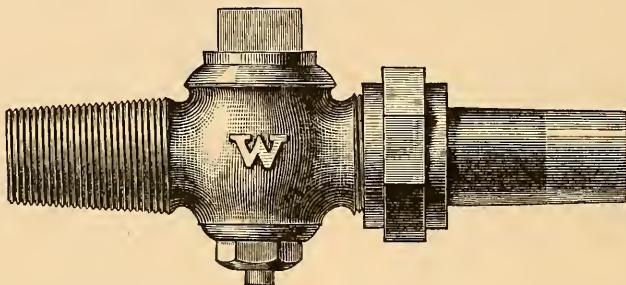
Fig. 470.



Plain and Hose Ends. (Finished.)

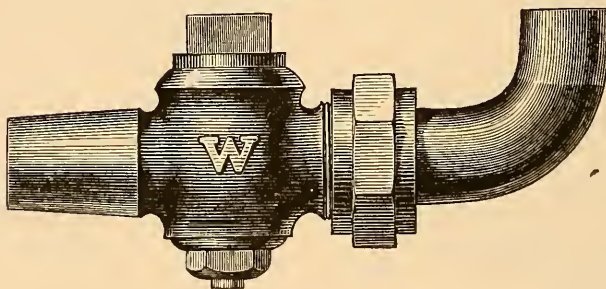
## CORPORATION COCKS.

Fig. 471.



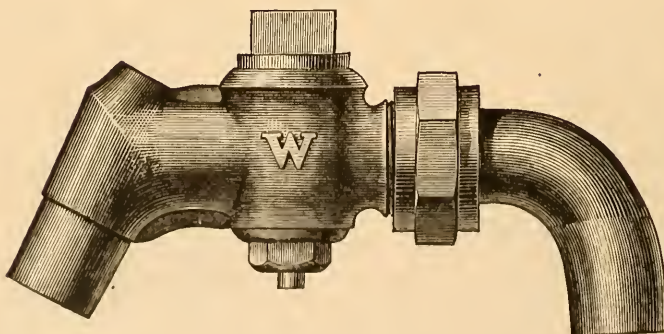
With Straight Union.

Fig. 472.



With Bent Union.

Fig. 473.

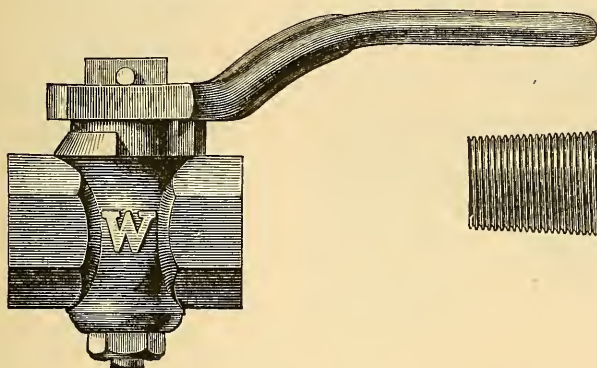


To drive with Union.



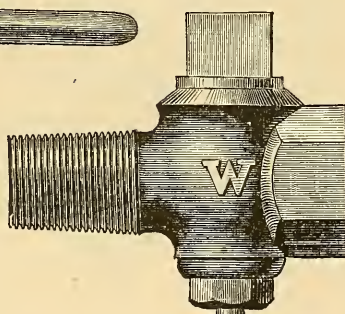
Lever Handle Stop Cock.

Fig. 475.



Corporation Cock.

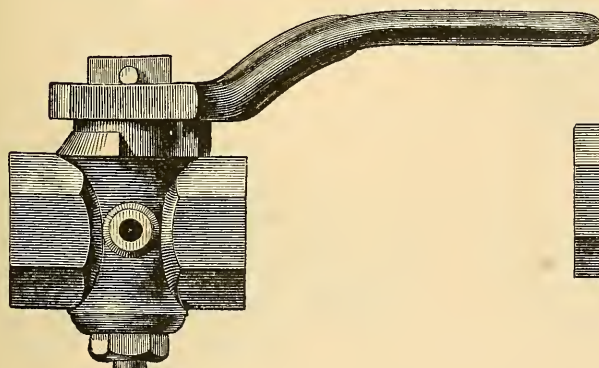
Fig. 474.



M. & F.

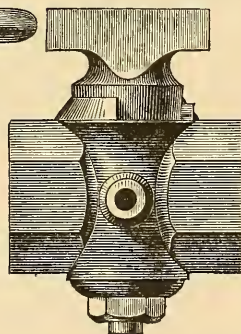
Lever Handle Stop and Waste  
Cock.

Fig. 476.



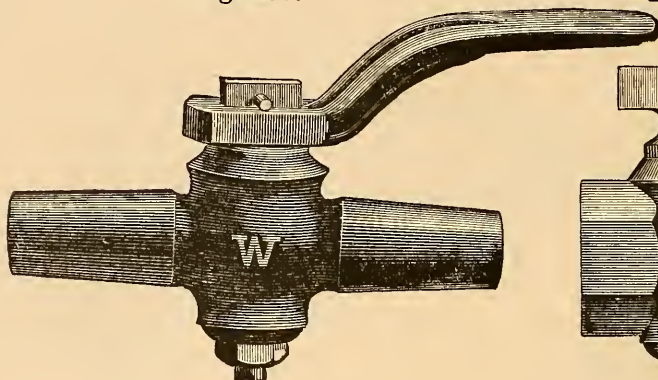
T Handle Stop and Waste.

Fig. 477.



Stop Cock, Ends to Solder.

Fig. 478.



T Handle Stop Cock.

Fig. 479.

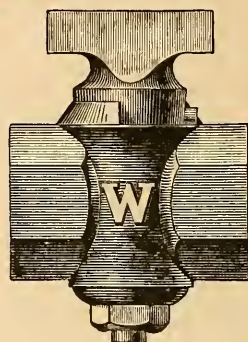
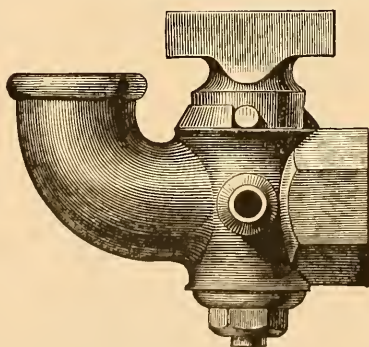
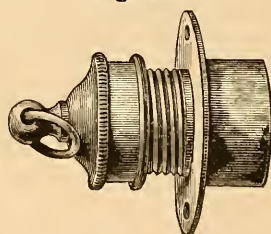
Hydrant Cock with Waste,  
T Handle.

Fig. 480.



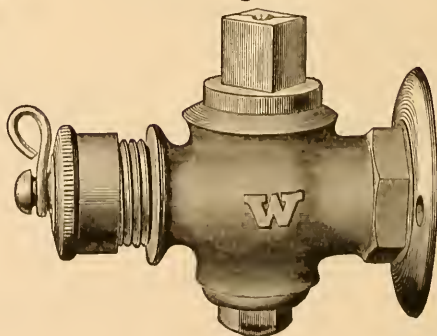
House Connection, with Cap.

Fig. 481.



Sill Cock.

Fig. 482.



All our Cocks are Nut and Washer bottom.

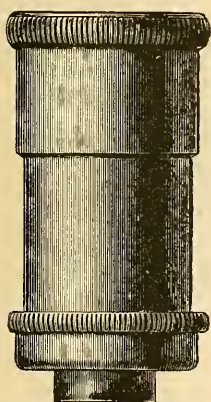
All the Cocks in the above list are full ROUND  
WAY.

1st quality Cocks are made from new metal.

2d quality are made from old composition.

# HOUGHTON'S PATENT FILTERS.

Fig. 483.



No. 1. (Reversible.)

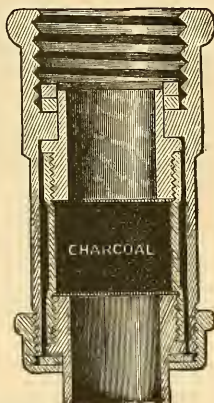


Fig. 484.

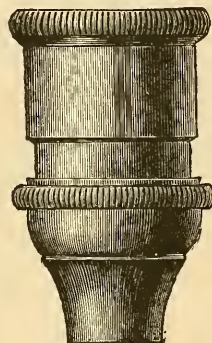
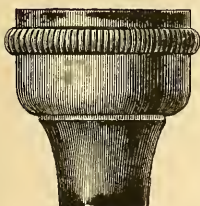
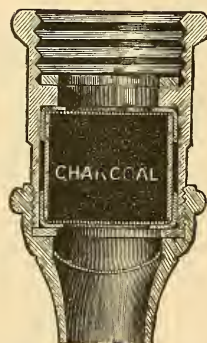
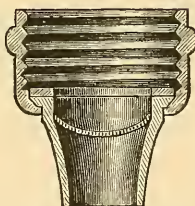


Fig. 485.



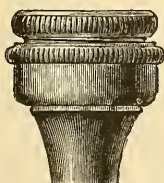
No. 3.



No. 2. (Reversible.)

## HOSE BIBB END.

Fig. 486.



No. 4.

Fig. 487.



$\frac{3}{4}$  inch.

The above cuts are about two-thirds size.



**CROTON FILTERS.**

Fig. 488.

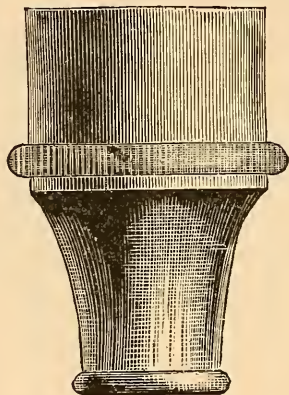
**RUBBER HOSE.**

Fig. 489.

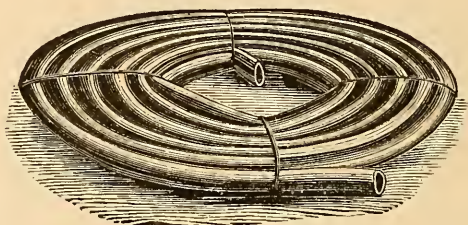
**CLARK'S LINEN ENGINE HOSE.**

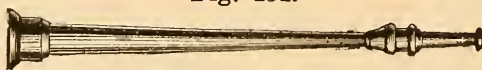
Fig. 490.



Will not mildew, and warranted to stand 700 lbs. pressure per square inch.

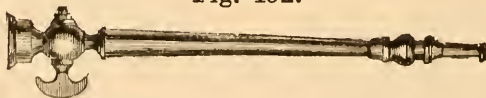
**HOSE PIPES. (Without Cocks.)**

Fig. 491.



Short and Long.

Fig. 492.



Short and Long. (With Cocks.)

**COMBINATION HOSE PIPE.**

Fig. 493.



12 and 14 inches long.

### THREE-WAY HOSE PIPES.

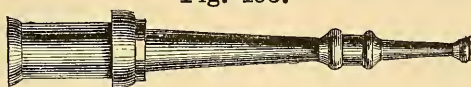
Fig. 494.



Closed.

### COMPRESSION HOSE PIPES.

Fig. 495.



### RUBBER HOSE PIPES.

Fig. 496.



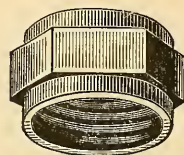
### HOSE SPRINKLERS.

Fig. 497.



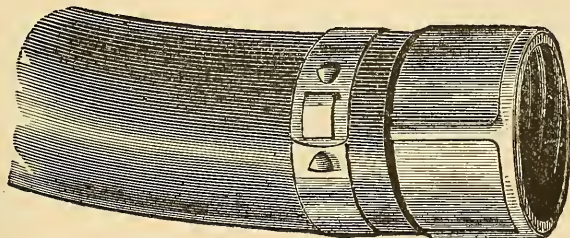
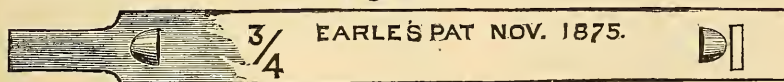
### HOSE CAPS.

Fig. 498.



### EARLE'S PATENT HOSE BANDS.

Fig. 499.



**CALDWELL'S PATENT HOSE STRAP.**

Fig. 500.

PATENTED MAY 15<sup>TH</sup> 1877.**LEAVITT'S HOSE-PIPE HOLDER.**

Fig. 501.

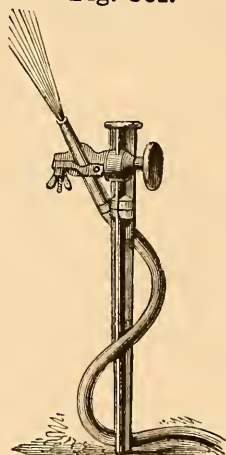
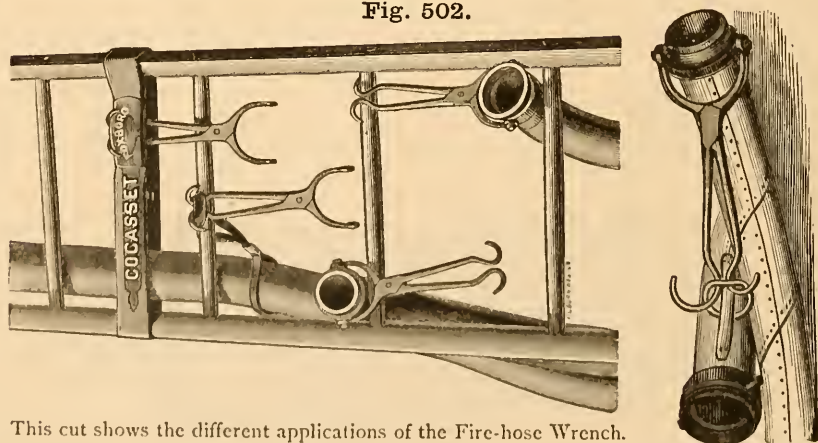
**POND'S PATENT FIRE-HOSE WRENCH.**

Fig. 502.

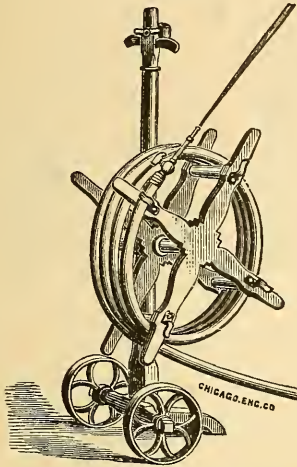


This cut shows the different applications of the Fire-hose Wrench.



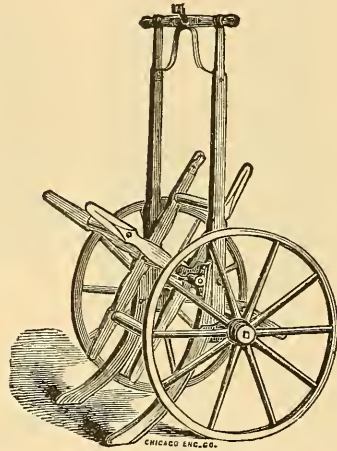
# THE FOUNTAIN HOSE CARRIAGE.

Fig. 503.



No. 1, Holds 50 to 75 ft.  $\frac{1}{4}$  in. Hose.

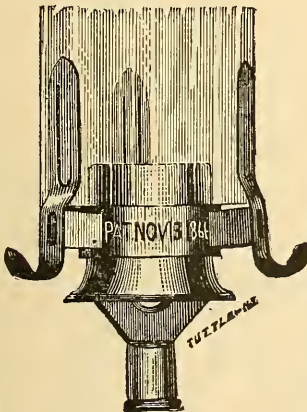
Fig. 504.



No. 2, Holds 100 to 150 ft.  $\frac{1}{4}$  in. Hose.  
 " 3, " 200 to 250 ft. " "

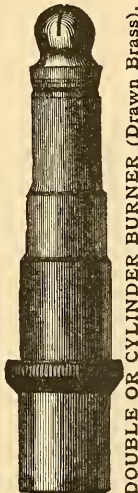
## GAS BURNERS AND TIPS.

Fig. 505.



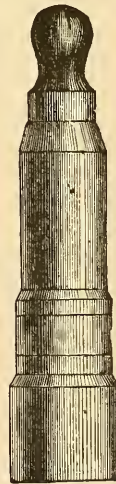
ARGAND BURNER. Open Spring Holder.

Fig. 506.



DOUBLE OR CYLINDER BURNER (Drawn Brass).

Fig. 507.



DOUBLE OR CYLINDER BURNER (Cast Brass).

Fig. 508.



Common Brass Burner

## Iron Burners. Iron Pillar. Brass Pillar.

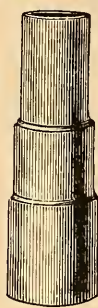
Fig. 509. Fig. 510. Fig. 511. Fig. 512.



Fishtail.



Batwing.



## Scotch Tips.

Fig. 513. Fig. 514.



Batwing.



Fishtail.

## Fishtail Burner Cleaner.

Fig. 517.



## Lava Tips.

Fig. 515. Fig. 516.

Exed. Head



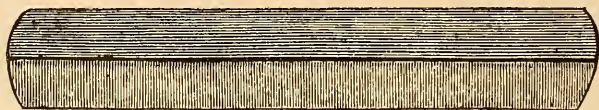
Batwing.



Fishtail.

## Batwing Burner Cleaner.

Fig. 518.



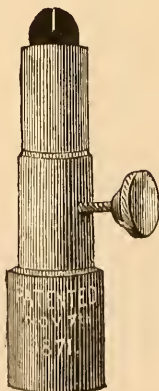
## Johnson's Street Gas Burner.

Fig. 519.



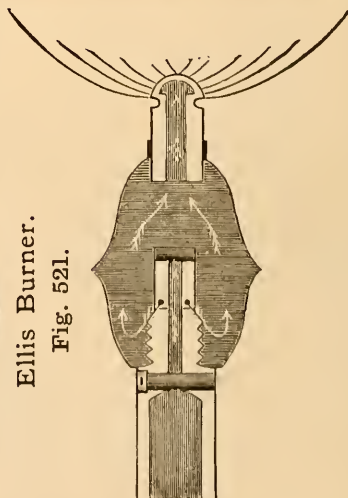
## Clough's Gasolene Burner.

Fig. 520.



## Ellis Burner.

Fig. 521.

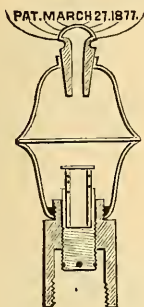


McGann's Burner.

Fig. 523.

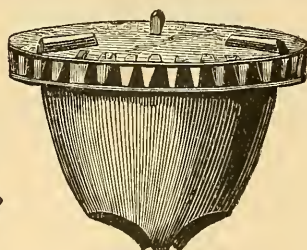
Anderson's Burner

Fig. 522.



Volcano Burner.

Fig. 524.



Nurse Lamp to fit over any Burner.

Fig. 527.

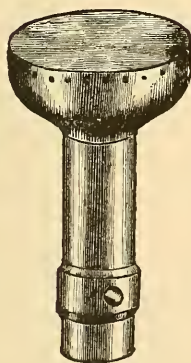
Jones' Burner.

Fig. 525.

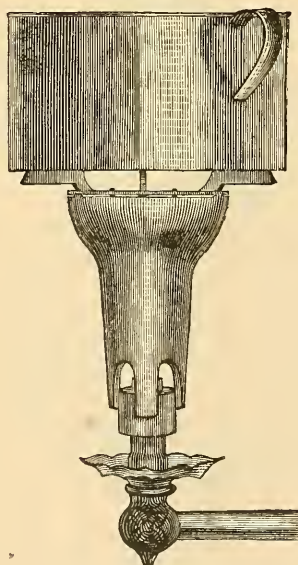
Fig. 526.



No. 1.



No. 2.



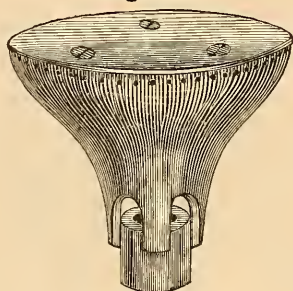
No. 3.

For Glue Kettles and Hot Water Boilers.



Large Iron Burner.

Fig. 528.



No. 4.

For Ranges and Stoves.

JONES' PATENT  
Automatic Regulator Burner

Fig. 530.

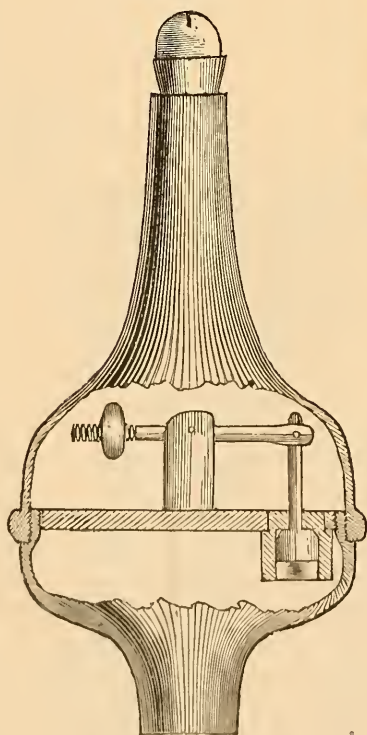
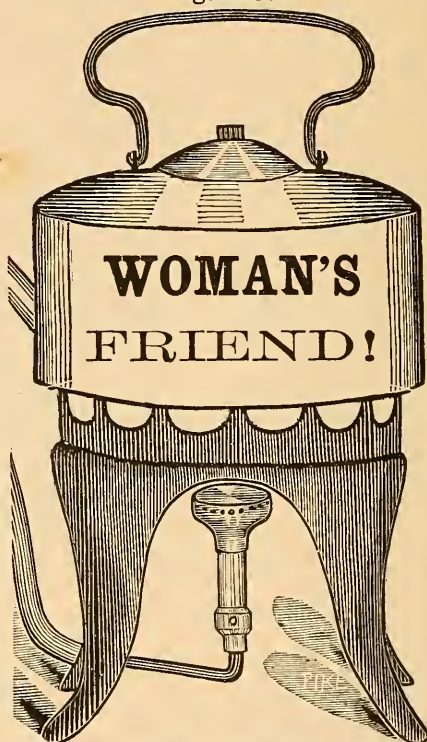
For City Street Lights, Railroads, Hotels,  
and all late burning Burners.

Fig. 529.



In general use and universally approved.

Alcohol Lamp.

Fig. 531.



# GAS FIXTURES.

## BRACKETS.

Fig. 532.



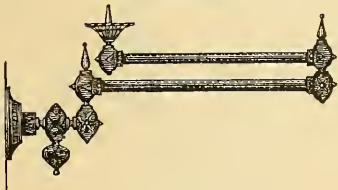
No. 100.

Fig. 533.



No. 109.

Fig. 534.



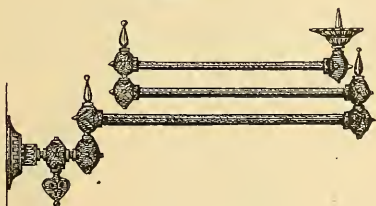
No. 102.

Fig. 535.



No. 111.

Fig. 536.



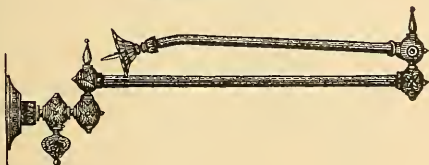
No. 104.

Fig. 537.



No. 112.

Fig. 538.



No. 106.

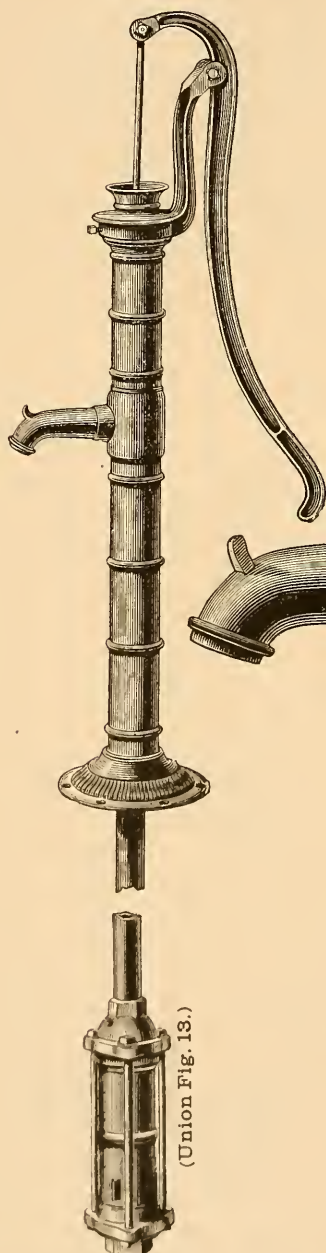
Fig. 539.



No. 113.

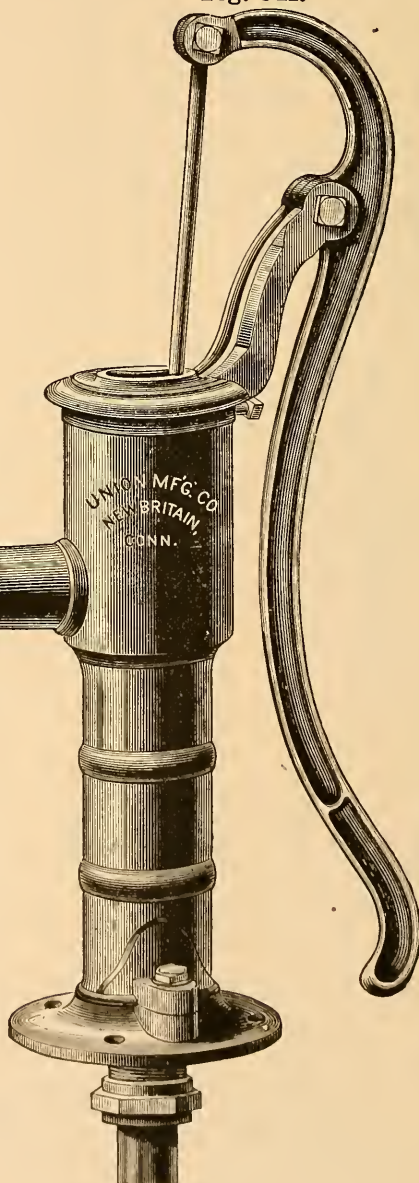
## CISTERN PUMP. (Eastern Pattern.)

Fig. 540.



(Union Fig. 13.)

Fig. 541.



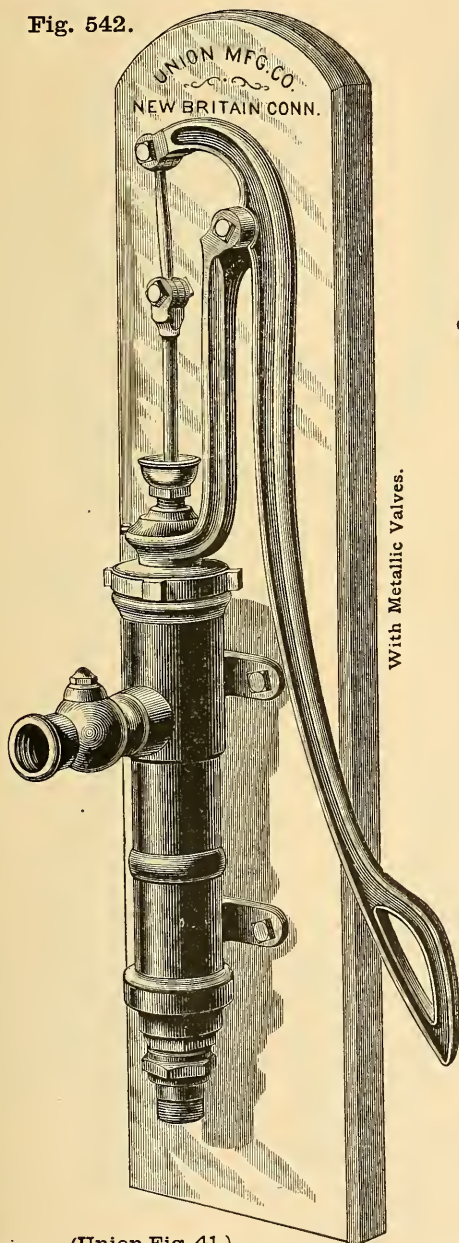
(Union Fig. 1.)

On Base, with Revolving Brake, and Brass Valve Seat.



**HAND  
Steam Boiler Force Pump.**

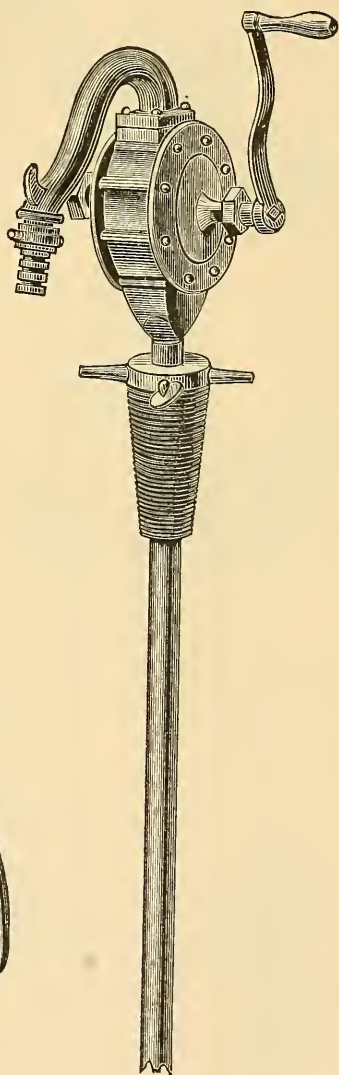
**Fig. 542.**



(Union Fig. 41.)

**HAND  
Rotary Barrel Pump.**

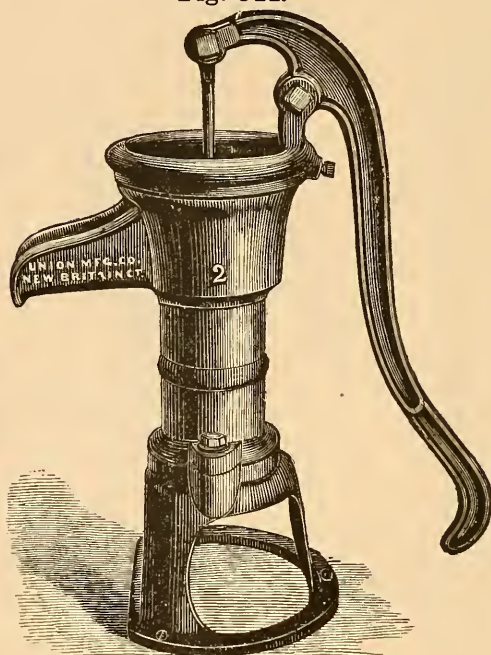
**Fig. 543.**



(Union Fig. 43.)

## Pitcher Spout Pump.

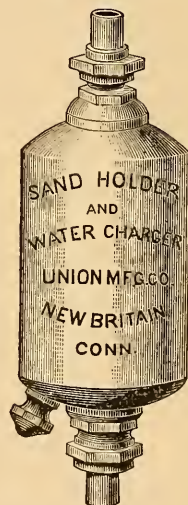
Fig. 544.



(Union Fig. 7.)

IMPROVED  
Water Filter and Primer.

Fig. 545.



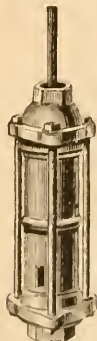
(Union Fig. 104.)

## Lower Sections or Working Cylinders

Leather Packed Pistons, with either Bolt or Screw Attachment.

Fig. 546.

BOLT ATTACHMENT.



(Union Fig. 44.)

For Iron Pipe with either Bolt or Screw Connection.

Fig. 547.

SCREW ATTACHMENT.



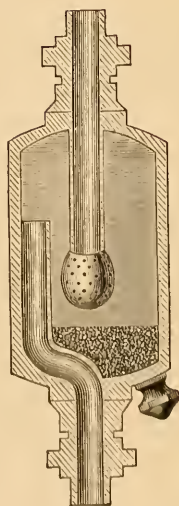
(Union Fig. 45.)

For Lead Pipe with either Bolt or Screw Connection.

Sizes, No. 1, of 2¼ inch bore.

- |   |          |   |
|---|----------|---|
| " | 2, of 2½ | " |
| " | 3, of 2¾ | " |
| " | 4, of 3  | " |
| " | 5, of 3¼ | " |
| " | 6, of 3½ | " |
| " | 7, of 3¾ | " |
| " | 8, of 4  | " |

Fitted for pipes of most suitable sizes.

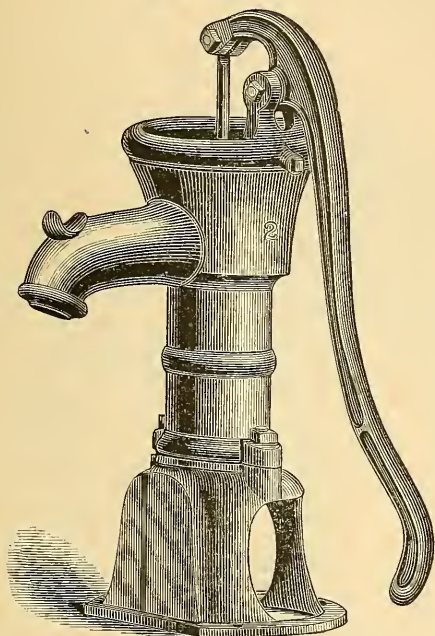


Section of Union Fig. 104.

## PITCHER-TOP PUMP. STRAINER and REST.

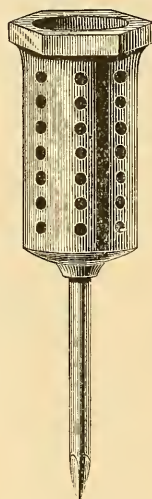
Fig. 548.

Fig. 549.



(Union Fig. 67.)

Fig. 48 represents our Improved Strainer and Rest, for  
the lower end of Iron Suction Pipe.



The point resting on the bottom of the Well, keeps the  
Pipe from vibrating.

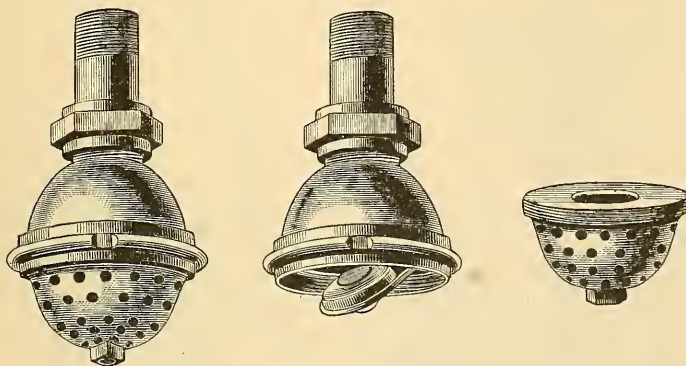
(Union Fig. 48.)

Sizes, suitable for  $1\frac{1}{4}$  inch Iron Pipe.

"	"	$1\frac{1}{2}$	"	"
"	"	2	"	"
"	"	$2\frac{1}{2}$	"	"
"	"	3	"	"

IMPROVED LOWER CHECK VALVE,  
WITH STRAINER ATTACHED.

Fig. 550.



(Union Fig. 49.)

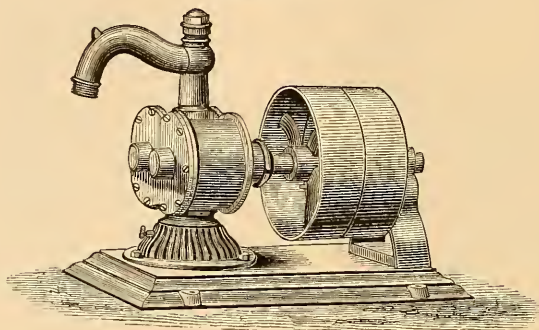
Fig. 49, shows our Improved Lower Check or Foot Valve, with Strainer, for attaching to the lower end of Suction Pipe of  
extreme length. The Check Valve being submerged, is always tight, and consequently sustains the  
column of water, and keeps the pipe filled.

Sizes, 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ , 2,  $2\frac{1}{4}$  and 3 inch. Fitted for Pipe of like size.



# ROTARY FORCE PUMP, on Frame. WITH TIGHT AND LOOSE PULLEYS.

Fig. 551.



(Union Fig. 66.)

## The Aquarius.

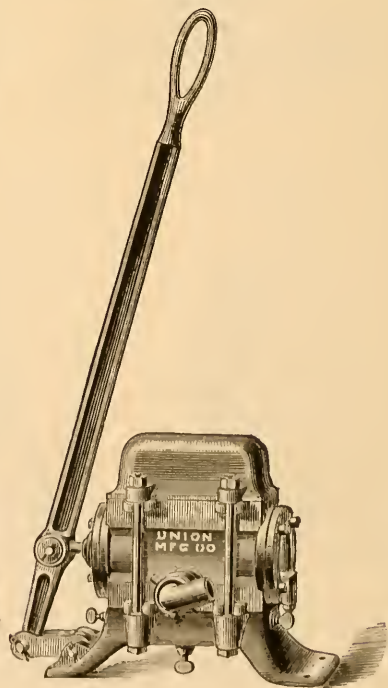
Fig. 552.



(Union Fig. 68.)

## HORIZONTAL DOUBLE ACTING Suction and Force Pump. Copper Lined Cylinder, Adjustable Lever.

Fig. 553.

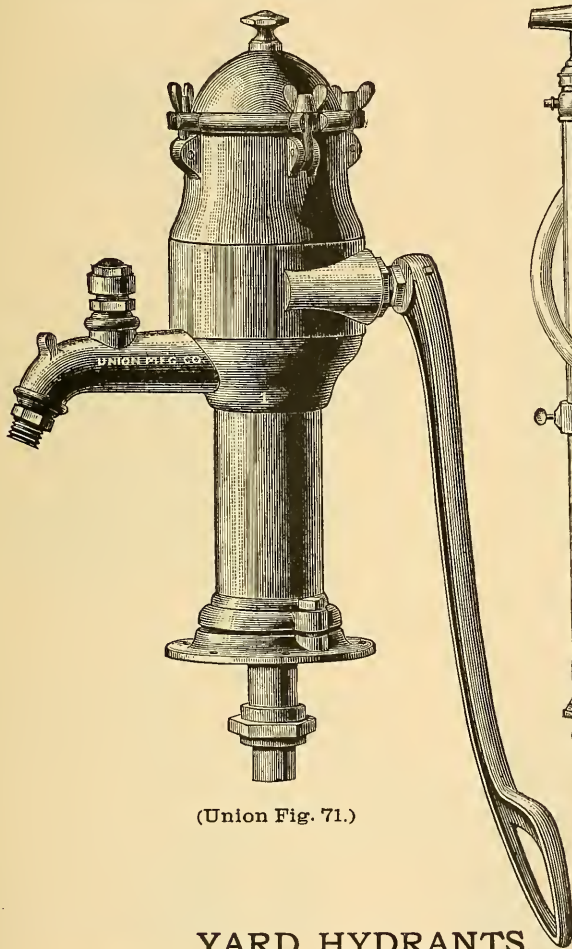


(Union Fig. 80.)

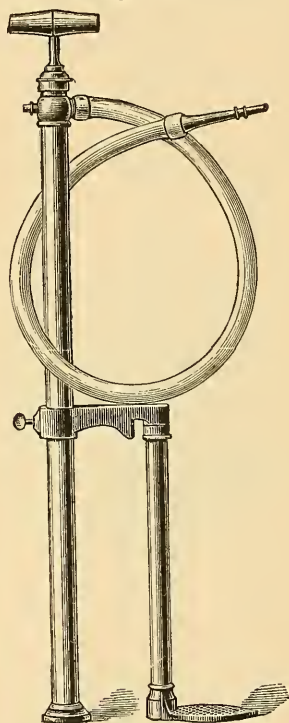
**"Centennial" Force or Lift Pump. The Aquapult.**

Fig. 554.

Fig. 555.



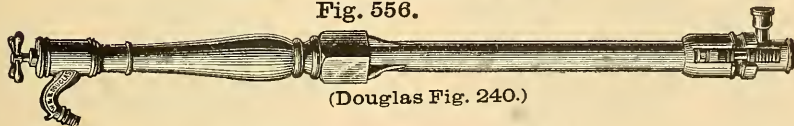
(Union Fig. 71.)



(Douglas Fig. 259.)

**YARD HYDRANTS.**

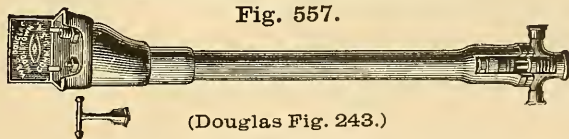
Fig. 556.



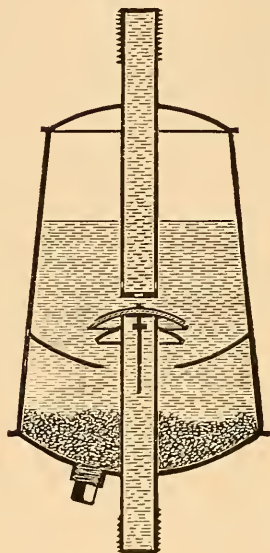
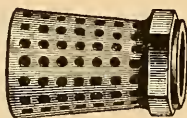
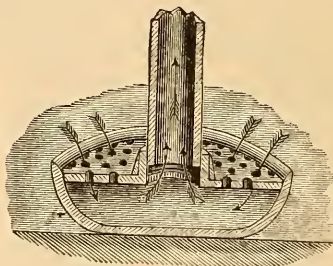
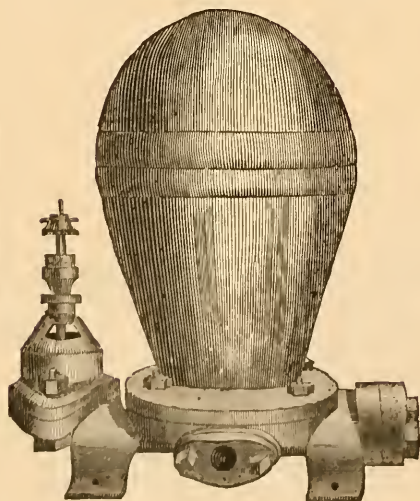
(Douglas Fig. 240.)

**STREET WASHERS.**

Fig. 557.



(Douglas Fig. 243.)

**Sells' Strainer.****Fig. 558.****Galvanized Strainer.****Fig. 559.****Mushroom Strainer.****Fig. 560.****HYDRAULIC RAM.****Fig. 561.****HODGKINS' Improved Water Ram.****Fig. 562.**

Patented Oct. 10, 1871, and Nov. 26, 1872.



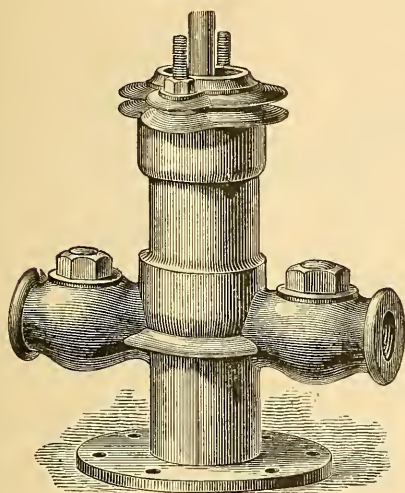
With Double Acting Balance Valve.



# Steam Boiler Feed Pumps.

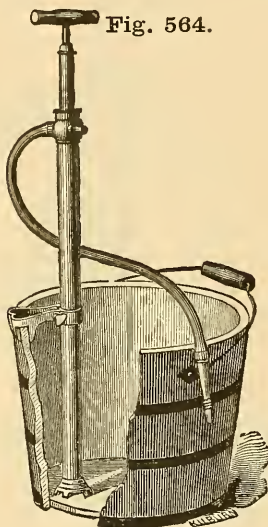
With Spherical Valve Chambers.

Fig. 563.



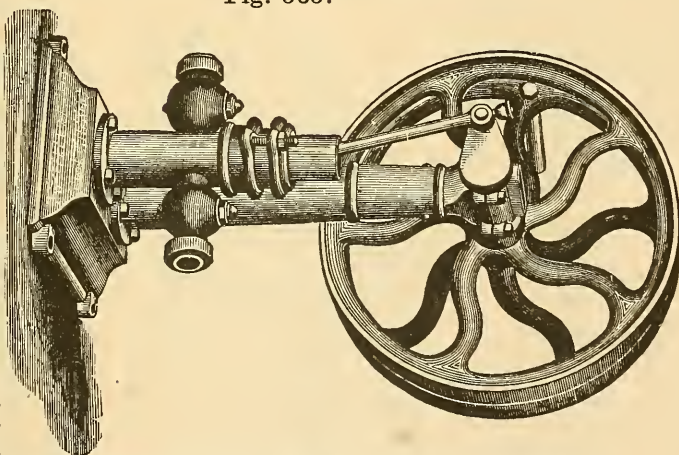
# JOHNSON'S Champion Force Pump.

Fig. 564.



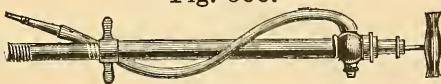
# COLUMN BOILER FORCE PUMP.

Fig. 565.



# JOHNSON'S PATENT DRIP PUMP.

Fig. 566.



For Gas Companies. Fitted for  $\frac{3}{4}$  in. Pipe.

Mounted on Base, with Column, Crank-Shaft and Pulleys, for hand or power.

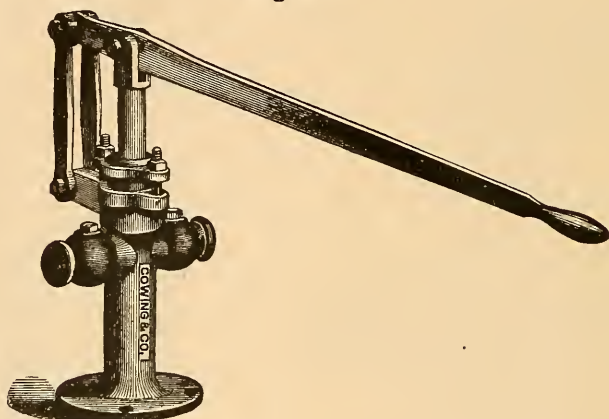
No.	1	2	3	4
Diameter of Piston,	2 in.	2 1/2 in.	3 in.	3 in.
Length of Stroke,	3 in.	6 in.	6 in.	6 in.

Size No. 1 kept in stock. Larger sizes furnished to order.

# HYDRAULIC PRESSURE PUMP,

For testing Boilers, Pipes, &c.

Fig. 567.



## Morrell's Submerged Deep Well and Force Pump.

Fig. 568.

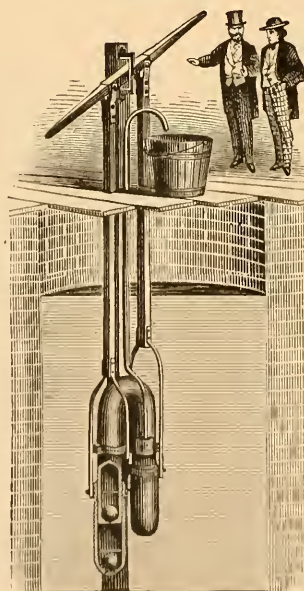
### Copper Pump.

Iron Top.

Fig. 569.



Size, Nos. 1, 2, 3.  
Diameter,  $2\frac{1}{2}$ ,  $2\frac{3}{4}$ , 3 inches.



ROBERTS & CO.

### Copper Pump.

Stationary Copper Top.

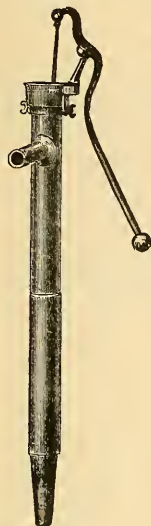
Fig. 570.



Size, Nos. 1, 2, 3, 4, 5.  
Diam.,  $2\frac{1}{2}$ ,  $2\frac{3}{4}$ , 3,  $3\frac{1}{2}$ ,  $3\frac{1}{2}$  in.

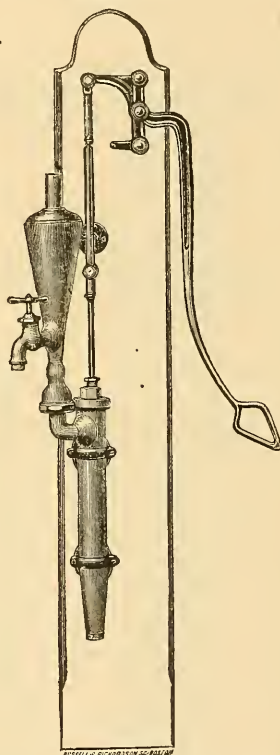
AIR  
Chamber Pump, Iron Top.

Fig. 571.



Force Pump on Plank.

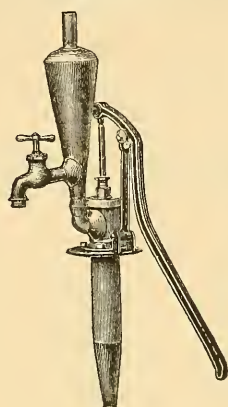
Fig. 573.



Flange Force Pump.

To Screw to Shelf.

Fig. 572.



Lower Boxes. Upper Boxes. Upper Clasps. Lower Clasps.

Fig. 574.



Fig. 575.



Fig. 576.



Fig. 577.



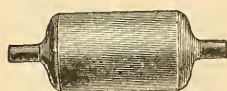
Flange Clasps.

Fig. 578.



Air Chamber.

Fig. 579.



Copper, 6½ inch.

Flange Couplings.

Fig. 580.

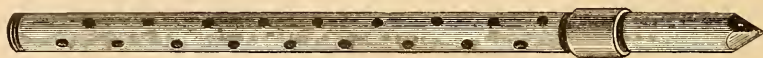




# DRIVE WELL POINTS.

## LEWIS'.

Fig. 581.



## GALVANIZED.

Fig. 582.



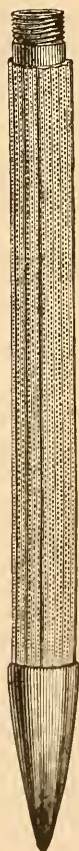
## BRASS COVERED.

Fig. 583.

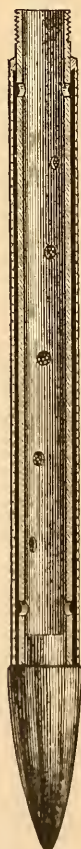


## EDSON'S CORRUGATED.

Fig. 584.



## SECTIONAL VIEW.



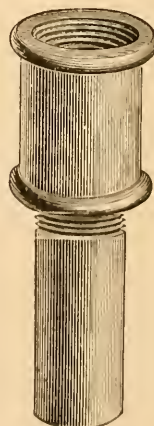
## DRIVER HEAD.

Fig. 585.



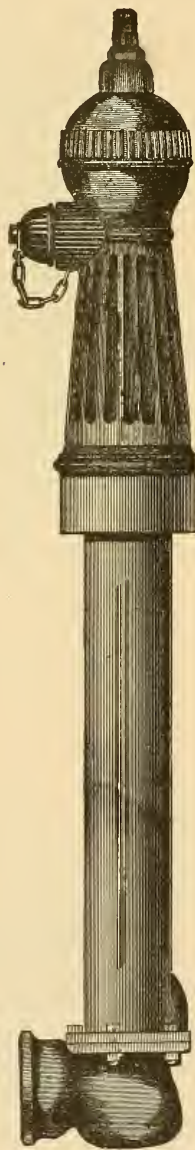
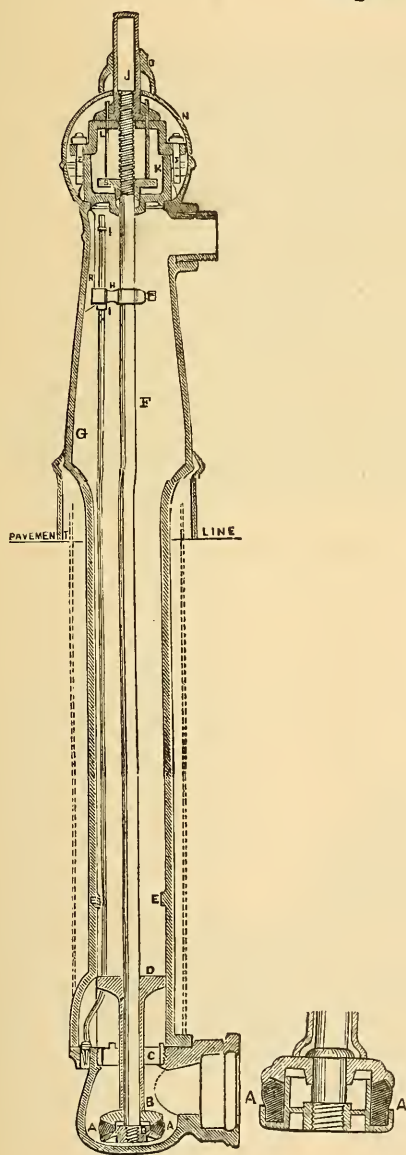
## Plumbers' Brass Pipe

Fig. 586.



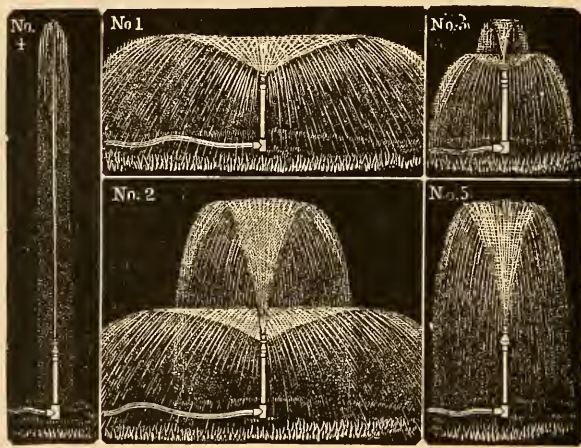
## LUDLOW'S PATENT FIRE HYDRANT.

Fig. 588.



**JENKS'**  
**PATENT PORTABLE LAWN FOUNTAIN,**  
 Attached to head of water for Ornamenting and Irrigating Lawns, Gardens, Flower and  
 Strawberry Beds, etc.

Fig. 589.



Pat. June 9, 1874.

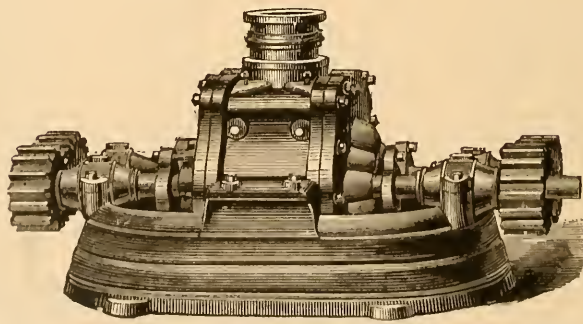


Pat. May 26, 1874.

**CROCKER'S TWIN ROTARY PUMP.**

Patented January 4, 1876.

Fig. 590.



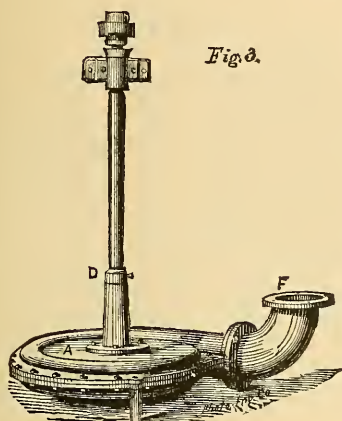
CUT OF PUMP COMPLETE.

6 sizes made. Circulars mailed on application.



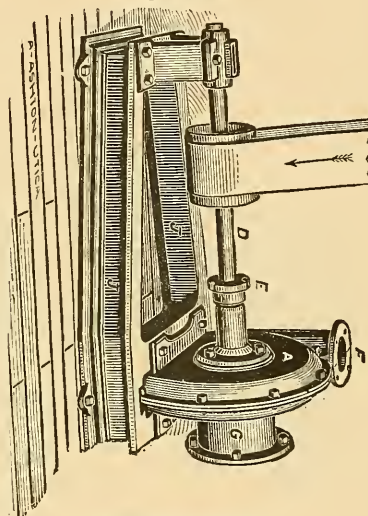
# HEALD & CISCO CENTRIFUGAL PUMP.

Fig. 591.



The Vertical Pump.

Fig. 592.



The Horizontal Pump.

## Foster's "Excelsior" Pump. "Excelsior" Hand Pump.

Fig. 593.

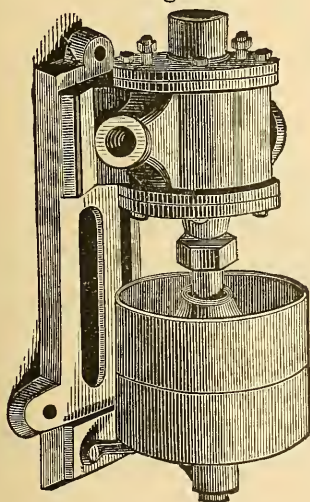
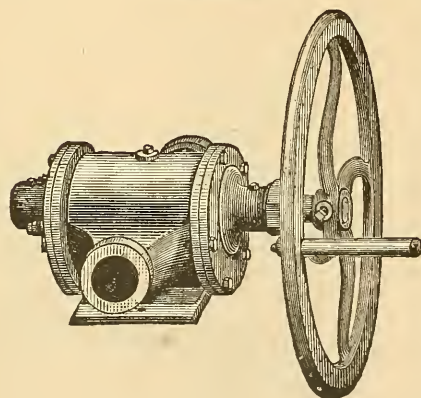
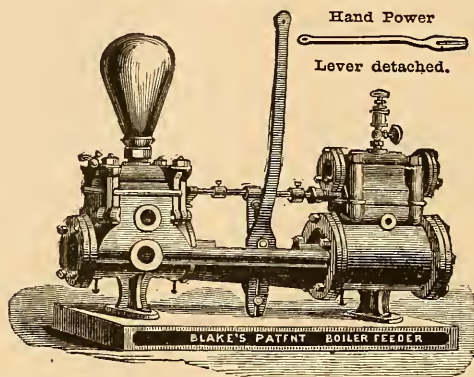


Fig. 594.



## BLAKE'S PATENT STEAM PUMP.

Fig. 595.

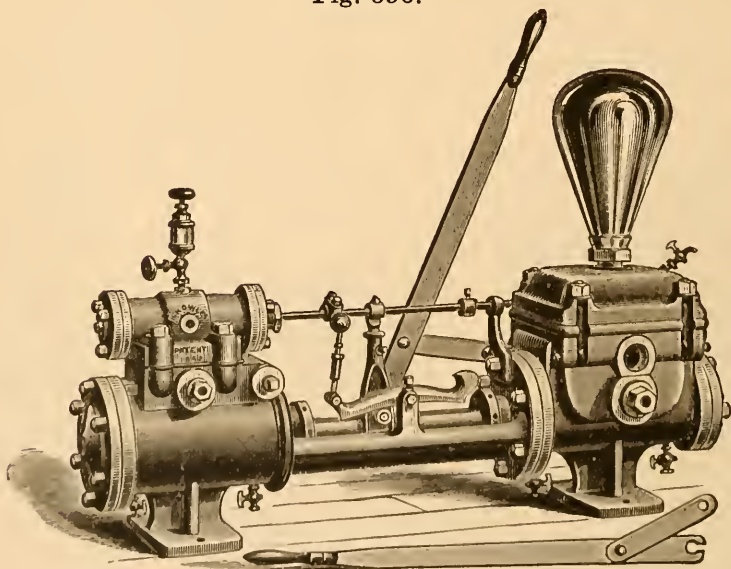


Pumps for Feeding Boilers.

## KNOWLES' PATENT Boiler Feeding and Heavy Pressure Pumps.

Arranged for either hot or cold water.

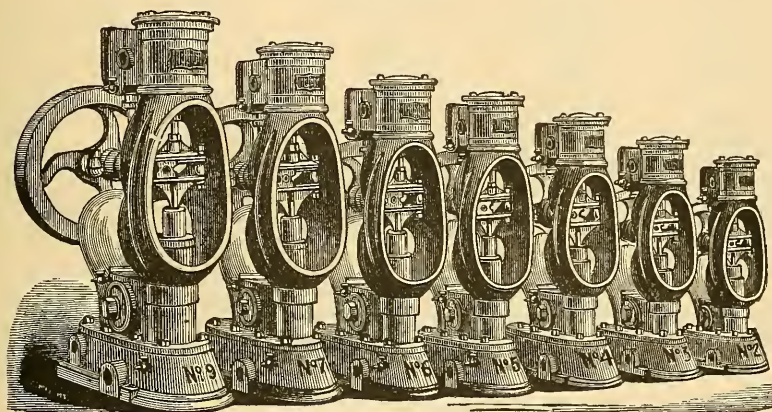
Fig. 596.



Cut above represents regular Boiler Feed Pump, No. 3 and 4. Showing New Patent Valve Motion, and Hand Power LEVER attached and detached.

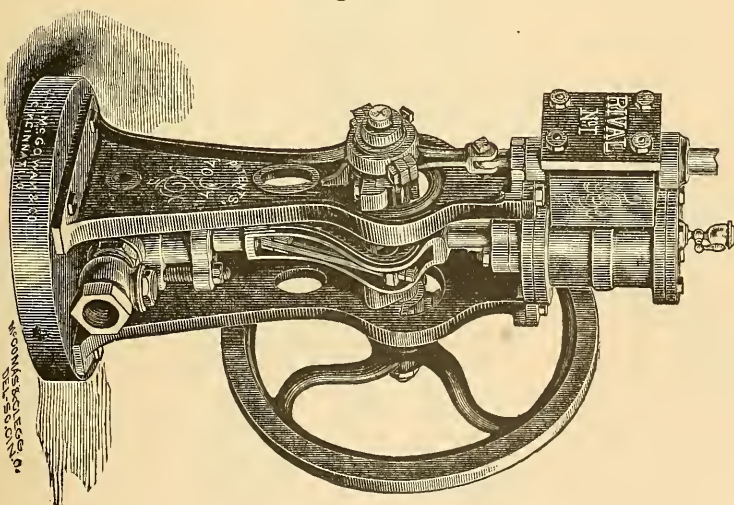
WRIGHT'S PATENT  
Double-Acting Bucket Plunger Steam Pumps.

Fig. 597.



"RIVAL" STEAM PUMPS.

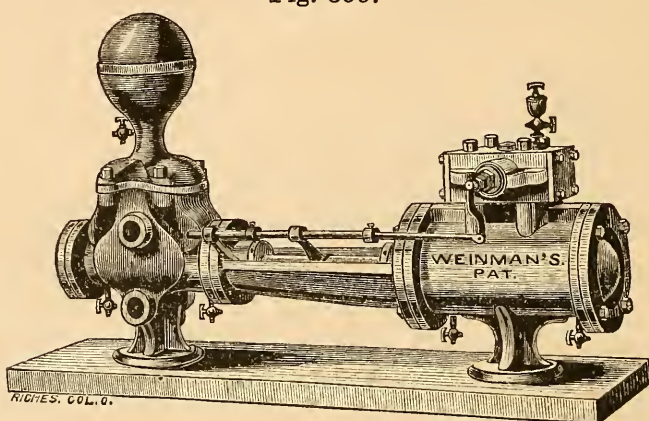
Fig. 598.





## WEINMAN'S PATENT STEAM PUMPS.

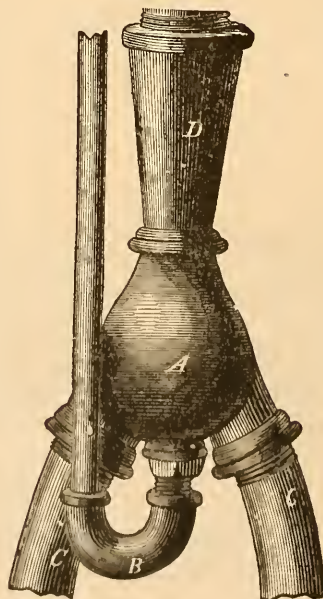
Fig. 599.



## Landsell's Patent Steam Syphon Pumps.

Fig. 600.

A, Body of Syphon.  
B, Steam Pipe.



C, C, Suction Pipe.  
D, E, Discharge Pipe.

## THE HANCOCK INSPIRATOR.

Fig. 601.

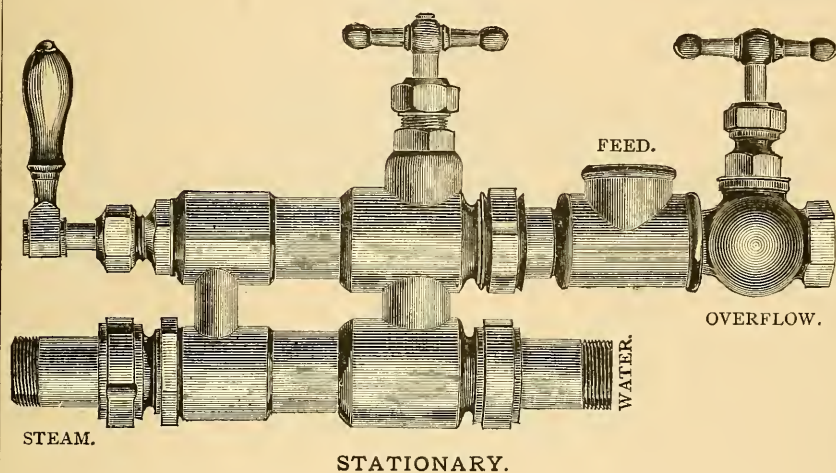
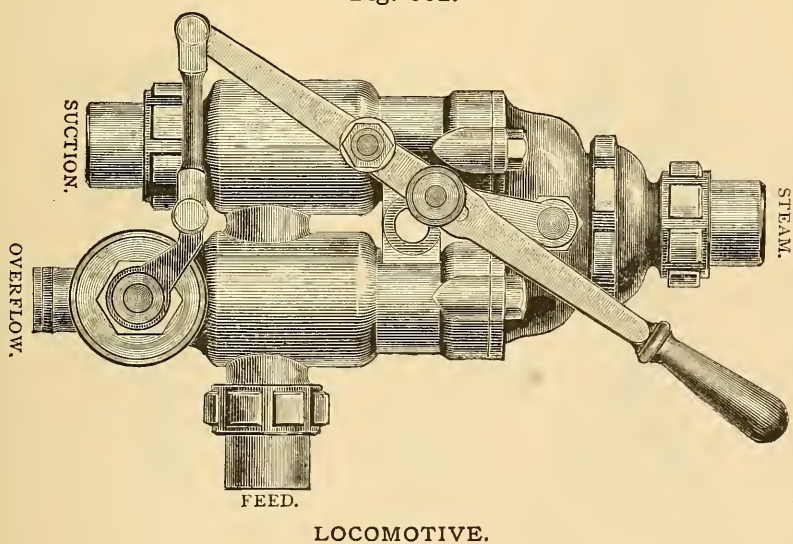


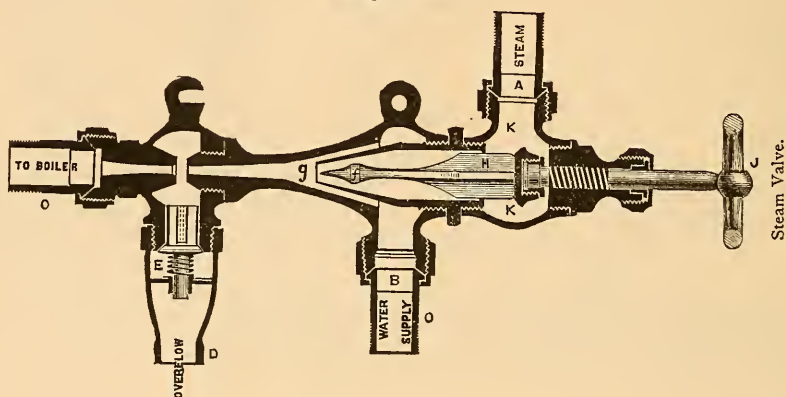
Fig. 602.



# MACK'S PATENT INJECTORS OR BOILER FEEDERS.

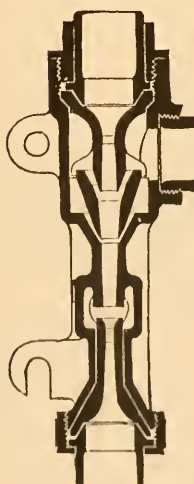
For Stationary, Marine and Portable Boilers.

Fig. 603.



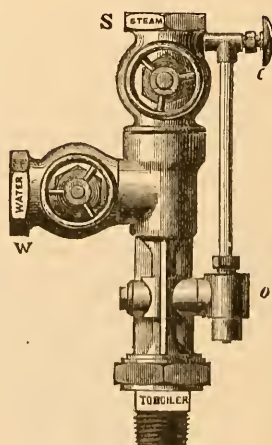
## THE FRIEDMANN INJECTOR.

Fig. 604.



CLASS C.—Non-lifting.

Fig. 605.



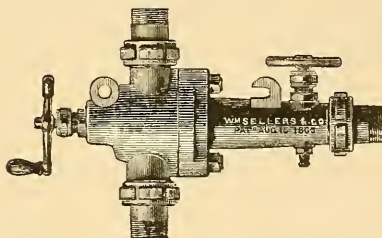
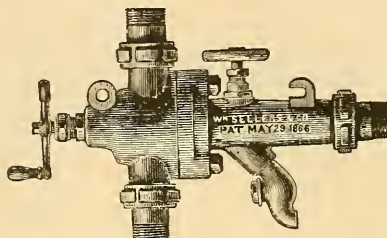
CLASS D.—Lifting.



# GIFFARD'S INJECTOR.

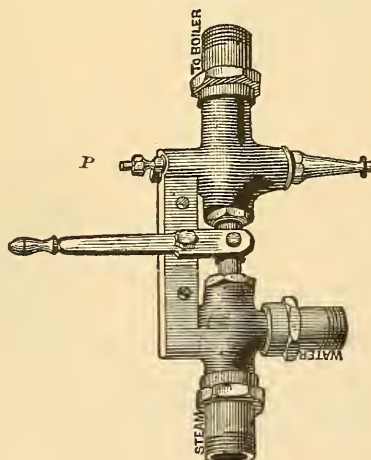
For Feeding Boilers.

Fig. 606.



# RUE'S LITTLE GIANT INJECTOR.

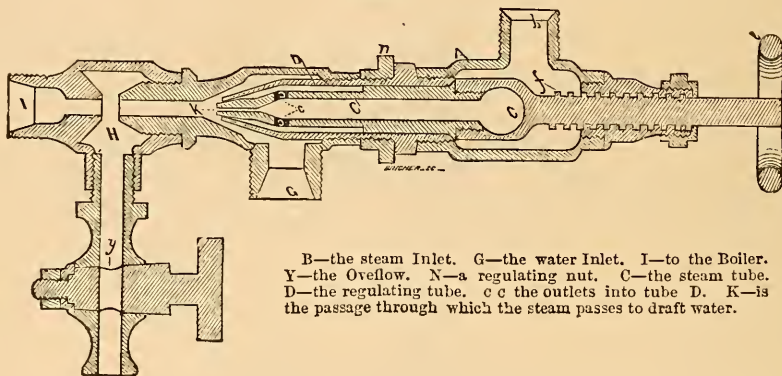
Fig. 607.



Where the water is to be lifted a small steam pipe is attached at P for a lifting jet.

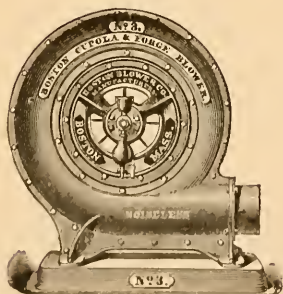
## LITTLE'S INJECTOR.

Fig. 608.



B—the steam Inlet. G—the water Inlet. I—to the Boiler.  
Y—the Overflow. N—a regulating nut. C—the steam tube.  
D—the regulating tube. c c the outlets into tube D. K—is  
the passage through which the steam passes to draft water.

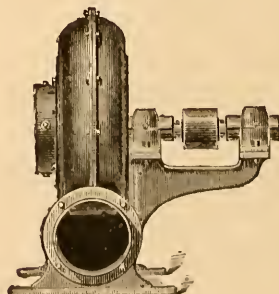
## FAN BLOWERS.



For Cupola Furnaces and Forges, Puddling  
and Heating Furnaces, Steam Boilers,  
drying Cotton, Wool, &c.

## EXHAUST FANS.

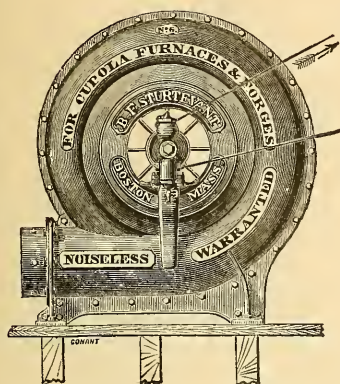
Fig. 609.



For removing Shavings from Wood Working  
Machinery, dust from Sand and Emery  
Wheels, Ventilation, Refrigerating, &c.

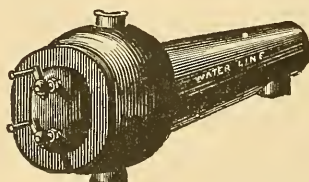
## Sturtevant Blower.

Fig. 610.



## Self-Acting Water Feeder.

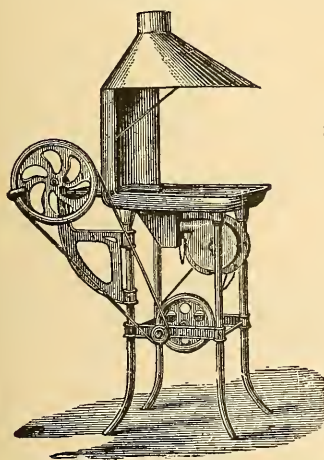
Fig. 611.



## Blacksmith's Forges.

(ROTARY.)

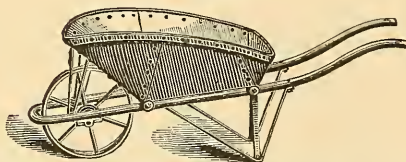
Fig. 612.



Forge No. 1, with Hood. Weight, 88 lbs.  
Diameter of Fan, 6 inches.

## Coal Barrows.

Fig. 613.

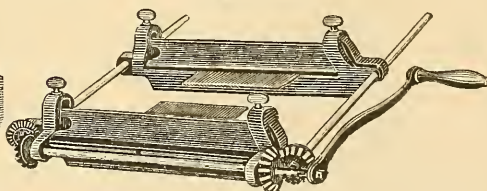


Size A, with Tray holding 300 lbs. of coal. Greatest width of Tray 30 inches. Weight of Barrow, 135 lbs. Lifting weight, 28 lbs.

## Gardner's Patent Belt Clamp,

For drawing belts together for the purpose of lacing them.

Fig. 614.

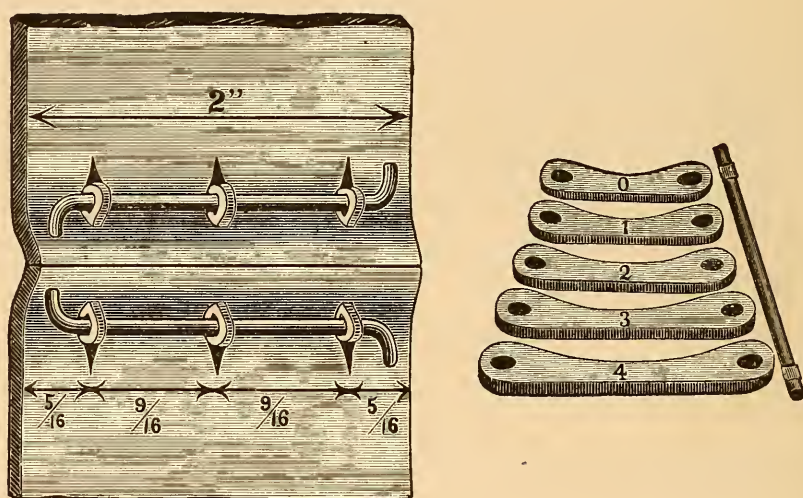


8, 12, 16 inch, and larger.



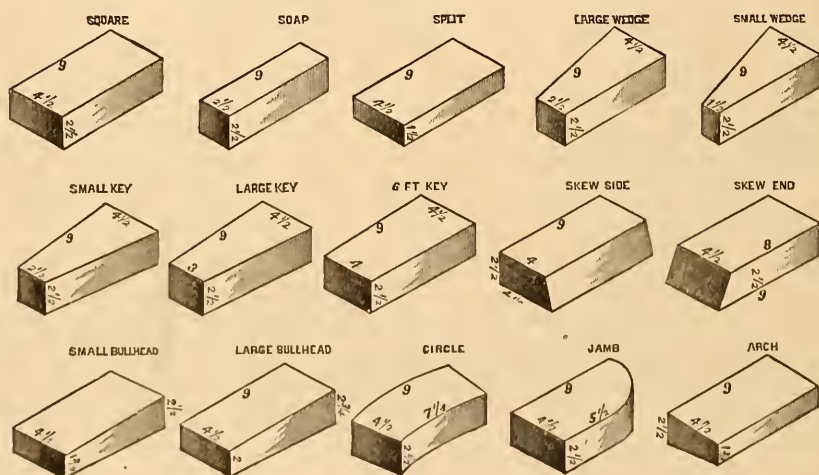
## CHAPMAN'S PATENT BELT FASTENING.

Fig. 615.



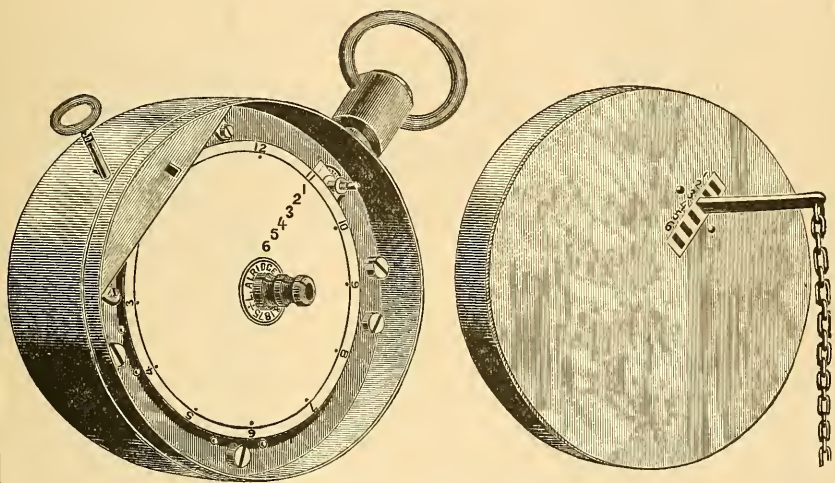
## FIRE BRICK.

Fig. 616.



## WATCHMAN'S TIME DETECTOR.

Fig. 617.



To record the movements of Watchmen in each room of Factories, Warehouses, Machine Shops, Railroad Buildings, &c.

## BUERK'S WATCHMAN'S TIME DETECTOR.

Fig. 618.

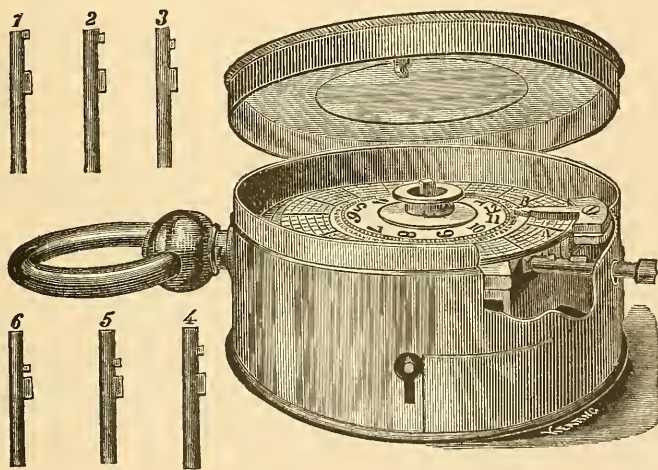
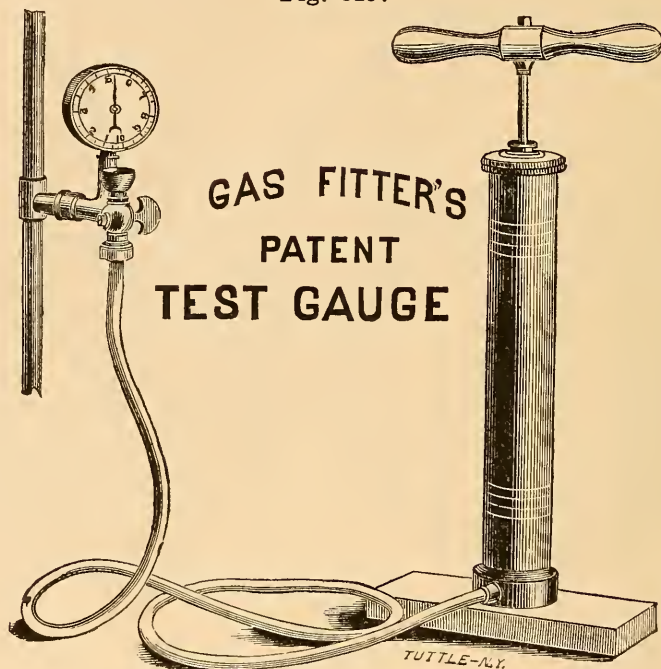
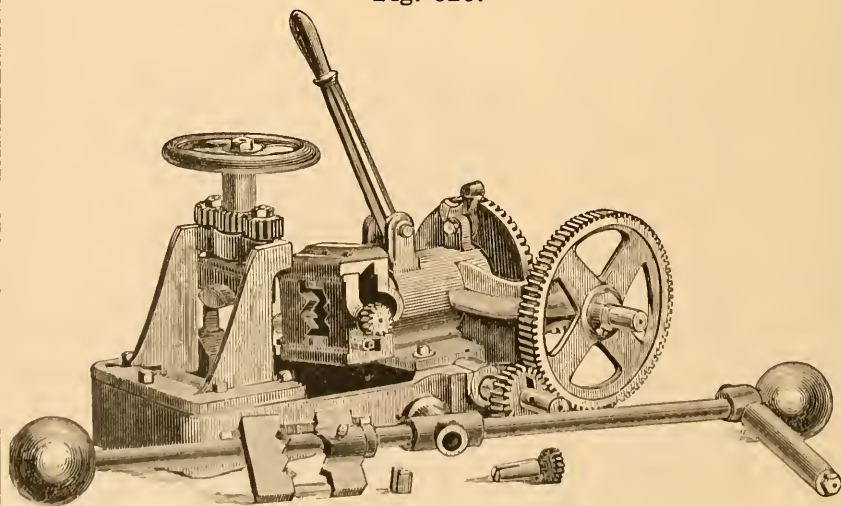


Fig. 619.



Pipe and Bolt Threading, and Cutting Machine.

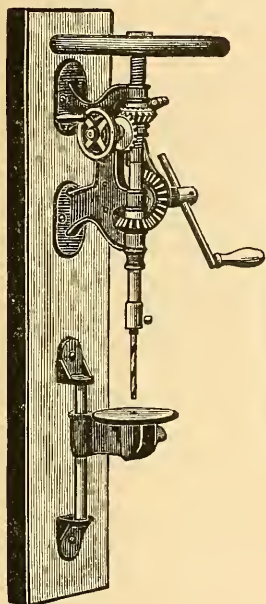
Fig. 620.

To cut  $\frac{1}{2}$  in. to 2 in. Pipe.



**TAFT'S**  
**Drilling Machines.**  
(Self-Feeding.)

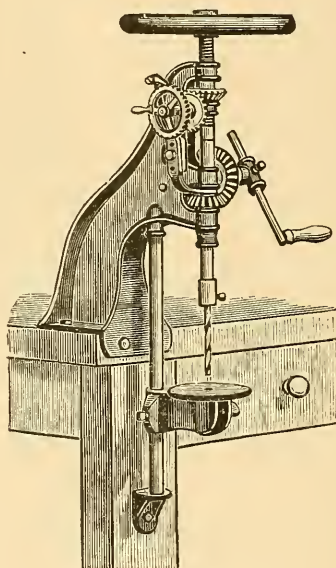
**Fig. 621.**



This cut represents No. 2 Drill.

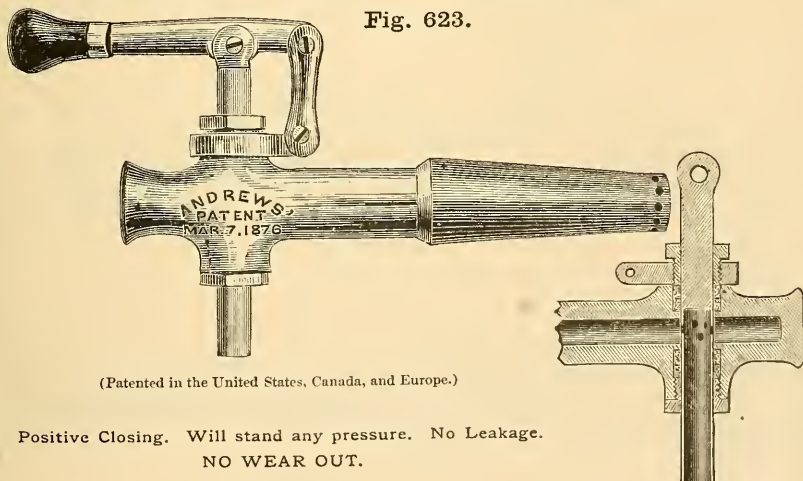
**TAFT'S**  
**Improved Bench Drill.**

**Fig. 622.**



**ANDREWS PATENT**  
**Beer, and Hot and Cold Water Faucets.**

**Fig. 623.**

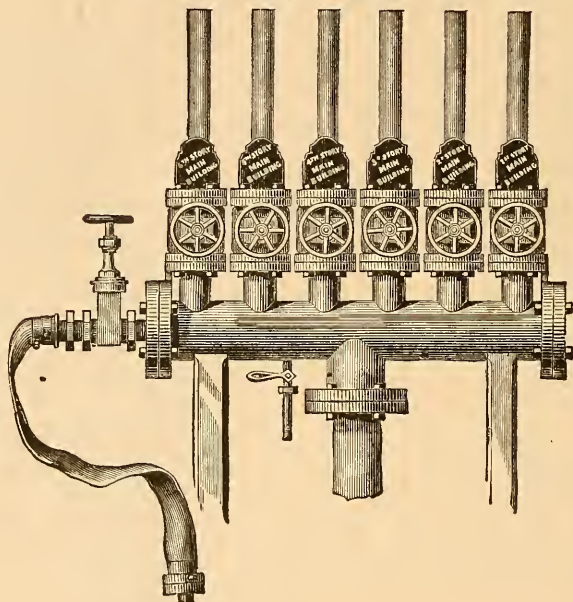


(Patented in the United States, Canada, and Europe.)

Positive Closing. Will stand any pressure. No Leakage.  
NO WEAR OUT.

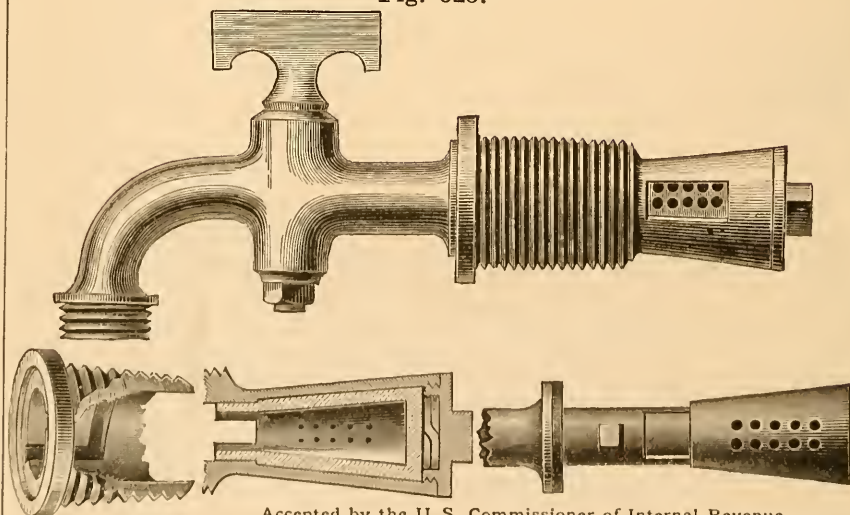
## Fire Extinguishing Apparatus for Factories.

Fig. 624.



## COMBINATION LOCK FAUCET.

Fig. 625.

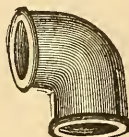


Accepted by the U. S. Commissioner of Internal Revenue.

# MALLEABLE IRON FITTINGS.



## ELBOWS.



Smooth, without bead for Gas.

With bead for Steam and Water.

No.	
* 1	$\frac{1}{8}$
* 2	$\frac{1}{4} \times \frac{1}{8}$
3	$\frac{1}{4}$
* 4	$\frac{3}{8} \times \frac{1}{8}$
5	$\frac{3}{8} \times \frac{1}{4}$
6	$\frac{3}{8}$
8	$\frac{1}{2} \times \frac{3}{8}$
9	$\frac{1}{2}$
* 11	$\frac{3}{4} \times \frac{3}{8}$
12	$\frac{3}{4} \times \frac{1}{2}$
13	$\frac{3}{4}$
16	$1 \times \frac{1}{2}$

No.	
17	$1 \times \frac{3}{4}$
18	1
21	$1\frac{1}{4} \times \frac{3}{4}$
22	$1\frac{1}{4} \times 1$
23	$1\frac{1}{4}$
25	$1\frac{1}{2} \times \frac{3}{4}$
26	$1\frac{1}{2} \times 1$
27	$1\frac{1}{2} \times 1\frac{1}{4}$
28	$1\frac{1}{2}$
31	$2 \times 1\frac{1}{4}$
32	$2 \times 1\frac{1}{2}$

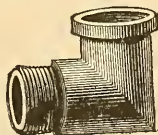
No.	
33	2
36	$2\frac{1}{2} \times 1\frac{1}{2}$
37	$2\frac{1}{2} \times 2$
38	$2\frac{1}{2}$
40	$3 \times 2$
41	$3 \times 2\frac{1}{2}$
42	3
45	$3\frac{1}{2} \times 3$
46	$3\frac{1}{2}$
49	$4 \times 3\frac{1}{2}$
50	4

NOTE.—All sizes 2 inch and under, furnished plain for gas or beaded for steam, except those marked \*, which are plain only.

All sizes above 2 inch are with bead or band.

In ordering, be particular to mention gas or steam.

## STREET ELBOWS.



Male and Female Screw.

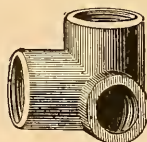
No.	
60	$\frac{1}{2}$
61	$\frac{3}{4} \times \frac{1}{2}$
62	$\frac{3}{4}$
64	$1 \times \frac{3}{4}$

No.	
65	1
67	$1\frac{1}{4} \times 1$
68	$1\frac{1}{4}$
71	$1\frac{1}{2} \times 1\frac{1}{4}$

No.	
72	$1\frac{1}{2}$
74	$2 \times 1\frac{1}{2}$
75	2



## ELBOWS.

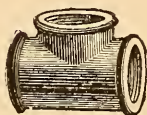


With Side Outlet.

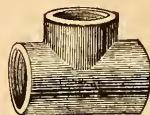
No.	S. O.
77	$\frac{3}{8} \times \frac{3}{8} \times \frac{1}{4}$
78	$\frac{3}{8} \times \frac{3}{8} \times \frac{3}{8}$
80	$\frac{1}{2} \times \frac{1}{2} \times \frac{3}{8}$
81	$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$
83	$\frac{3}{4} \times \frac{3}{4} \times \frac{3}{8}$

No.	S. O.
84	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{2}$
85	$\frac{3}{4} \times \frac{3}{4} \times \frac{3}{4}$
87	$1 \times 1 \times \frac{3}{8}$
88	$1 \times 1 \times \frac{1}{2}$

No.	S. O.
89	$1 \times 1 \times \frac{3}{4}$
90	$1 \times 1 \times 1$
94	$1\frac{1}{4} \times 1\frac{1}{4} \times 1$
95	$1\frac{1}{4} \times 1\frac{1}{4} \times 1\frac{1}{4}$



## TEES.



In describing Tees the *run* is first named, then the outlet, thus :

$$\frac{1}{2} \overset{\frac{1}{4}}{\perp} \frac{3}{8} = \frac{1}{2} \times \frac{3}{8} \times \frac{1}{4}$$

$$\frac{1}{2} \overset{\frac{3}{8}}{\perp} \frac{1}{2} = \frac{1}{2} \times \frac{3}{8}$$

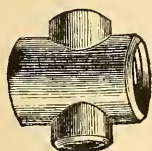
No.	
*100	$\frac{1}{8}$
*101	$\frac{1}{8} \times \frac{1}{4}$
*106	$\frac{1}{4} \times \frac{1}{8}$
107	$\frac{1}{4}$
*108	$\frac{1}{4} \times \frac{3}{8}$
*114	$\frac{3}{8} \times \frac{1}{4} \times \frac{1}{4}$
*115	$\frac{3}{8} \times \frac{1}{4} \times \frac{3}{8}$
*119	$\frac{3}{8} \times \frac{1}{8}$
120	$\frac{3}{8} \times \frac{1}{4}$
121	$\frac{3}{8}$
*122	$\frac{3}{8} \times \frac{1}{2}$
*129	$\frac{1}{2} \times \frac{3}{8} \times \frac{1}{4}$
*130	$\frac{1}{2} \times \frac{3}{8} \times \frac{3}{8}$
*131	$\frac{1}{2} \times \frac{3}{8} \times \frac{1}{2}$
*132	$\frac{1}{2} \times \frac{3}{8} \times \frac{3}{4}$
*134	$\frac{1}{2} \times \frac{1}{4}$
135	$\frac{1}{2} \times \frac{3}{8}$
136	$\frac{1}{2}$
137	$\frac{1}{2} \times \frac{3}{4}$
*146	$\frac{3}{4} \times \frac{3}{8} \times \frac{1}{2}$

No.	
*147	$\frac{3}{4} \times \frac{3}{8} \times \frac{3}{4}$
*148	$\frac{3}{4} \times \frac{3}{8} \times 1$
149	$\frac{3}{4} \times \frac{1}{2} \times \frac{1}{4}$
*150	$\frac{3}{4} \times \frac{1}{2} \times \frac{3}{8}$
151	$\frac{3}{4} \times \frac{1}{2} \times \frac{1}{2}$
152	$\frac{3}{4} \times \frac{1}{2} \times \frac{3}{4}$
*153	$\frac{3}{4} \times \frac{1}{2} \times 1$
*154	$\frac{3}{4} \times \frac{1}{4}$
155	$\frac{3}{4} \times \frac{3}{8}$
156	$\frac{3}{4} \times \frac{1}{2}$
157	$\frac{3}{4}$
158	$\frac{3}{4} \times 1$
*161	$1 \times \frac{3}{8} \times \frac{1}{2}$
*162	$1 \times \frac{3}{8} \times \frac{3}{4}$
*163	$1 \times \frac{3}{8} \times 1$
*164	$1 \times \frac{3}{8} \times 1\frac{1}{4}$
*165	$1 \times \frac{1}{2} \times \frac{3}{8}$
166	$1 \times \frac{1}{2} \times \frac{1}{2}$
*167	$1 \times \frac{1}{2} \times \frac{3}{4}$

No.	
*168	$1 \times \frac{1}{2} \times 1$
*169	$1 \times \frac{1}{2} \times 1\frac{1}{4}$
170	$1 \times \frac{3}{4} \times \frac{3}{8}$
171	$1 \times \frac{3}{4} \times \frac{1}{2}$
172	$1 \times \frac{3}{4} \times \frac{3}{4}$
173	$1 \times \frac{3}{4} \times 1$
*174	$1 \times \frac{3}{4} \times 1\frac{1}{4}$
175	$1 \times \frac{1}{4}$
176	$1 \times \frac{3}{8}$
177	$1 \times \frac{1}{2}$
178	$1 \times \frac{3}{4}$
179	$1$
180	$1 \times 1\frac{1}{4}$
180 $\frac{1}{2}$	$1 \times 1\frac{1}{2}$
*181	$1\frac{1}{4} \times \frac{3}{8} \times 1$
*182	$1\frac{1}{4} \times \frac{3}{8} \times 1\frac{1}{4}$
*184	$1\frac{1}{4} \times \frac{1}{2} \times 1$
*185	$1\frac{1}{4} \times \frac{1}{2} \times 1\frac{1}{4}$
188	$1\frac{1}{4} \times \frac{3}{4} \times \frac{3}{4}$

## TEES.—Continued.

No.		No.		No.	
*189	$1\frac{1}{4} \times \frac{3}{4} \times 1$	*214	$1\frac{1}{2} \times 1\frac{1}{4} \times \frac{3}{4}$	236	$2 \times \frac{3}{4}$
190	$1\frac{1}{4} \times \frac{3}{4} \times 1\frac{1}{4}$	215	$1\frac{1}{2} \times 1\frac{1}{4} \times 1$	237	$2 \times 1$
*191	$1\frac{1}{4} \times 1 \times \frac{3}{8}$	216	$1\frac{1}{2} \times 1\frac{1}{4} \times 1\frac{1}{4}$	238	$2 \times 1\frac{1}{4}$
*192	$1\frac{1}{4} \times 1 \times \frac{1}{2}$	217	$1\frac{1}{2} \times 1\frac{1}{4} \times 1\frac{1}{2}$	239	$2 \times 1\frac{1}{2}$
193	$1\frac{1}{4} \times 1 \times \frac{3}{4}$	219	$1\frac{1}{2} \times \frac{3}{8}$	240	2
194	$1\frac{1}{4} \times 1 \times 1$	220	$1\frac{1}{2} \times \frac{1}{2}$	249	$2 \times 2\frac{1}{2}$
195	$1\frac{1}{4} \times 1 \times 1\frac{1}{4}$	221	$1\frac{1}{2} \times \frac{3}{4}$	252	$2\frac{1}{2} \times 1$
*196	$1\frac{1}{4} \times 1 \times 1\frac{1}{2}$	222	$1\frac{1}{2} \times 1$	253	$2\frac{1}{2} \times 1\frac{1}{4}$
197	$1\frac{1}{4} \times \frac{3}{8}$	223	$1\frac{1}{2} \times 1\frac{1}{4}$	254	$2\frac{1}{2} \times 1\frac{1}{2}$
198	$1\frac{1}{4} \times \frac{1}{2}$	224	$1\frac{1}{2}$	255	$2\frac{1}{2} \times 2$
199	$1\frac{1}{4} \times \frac{3}{4}$	225	$1\frac{1}{2} \times 2$	256	$2\frac{1}{2}$
200	$1\frac{1}{4} \times 1$	226	$2 \times \frac{1}{2} \times 2$	265	$3 \times 1\frac{1}{4}$
201	$1\frac{1}{4}$	226 $\frac{1}{2}$	$2 \times \frac{3}{4} \times 2$	266	$3 \times 1\frac{1}{2}$
202	$1\frac{1}{4} \times 1\frac{1}{2}$	227	$2 \times 1 \times 2$	267	$3 \times 2$
202 $\frac{1}{2}$	$1\frac{1}{4} \times 2$	227 $\frac{1}{2}$	$2 \times 1\frac{1}{4} \times 1\frac{1}{4}$	268	$3 \times 2\frac{1}{2}$
*203	$1\frac{1}{2} \times \frac{1}{2} \times 1$	228	$2 \times 1\frac{1}{4} \times 1\frac{1}{2}$	269	3
204	$1\frac{1}{2} \times \frac{3}{8} \times 1\frac{1}{2}$	230	$2 \times 1\frac{1}{4} \times 2$	280	$3\frac{1}{2} \times 2\frac{1}{2}$
*205	$1\frac{1}{2} \times \frac{1}{2} \times 1\frac{1}{2}$	231	$2 \times 1\frac{1}{2} \times 1\frac{1}{4}$	281	$3\frac{1}{2} \times 3$
207	$1\frac{1}{2} \times \frac{3}{4} \times 1\frac{1}{2}$	232	$2 \times 1\frac{1}{2} \times 1\frac{1}{2}$	282	$3\frac{1}{2}$
*210	$1\frac{1}{2} \times 1 \times 1$	233	$2 \times 1\frac{1}{2} \times 2$	293	$4 \times 3$
*211	$1\frac{1}{2} \times 1 \times 1\frac{1}{4}$	234	$2 \times \frac{3}{8}$	294	$4 \times 3\frac{1}{2}$
212	$1\frac{1}{2} \times 1 \times 1\frac{1}{2}$	235	$2 \times \frac{1}{2}$	295	4



## CROSSES.



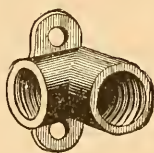
The outlets of a cross are always the same size.

No.		No.		No.	
*305	$\frac{1}{4}$	*317	$\frac{1}{2} \times \frac{3}{8} \times \frac{3}{8}$	321	$\frac{1}{2}$
*312	$\frac{3}{8} \times \frac{1}{4}$	*319	$\frac{1}{2} \times \frac{1}{4}$	*328	$\frac{3}{4} \times \frac{3}{8} \times \frac{1}{2}$
313	$\frac{3}{8}$	*320	$\frac{1}{2} \times \frac{3}{8}$	*330	$\frac{3}{4} \times \frac{1}{2} \times \frac{3}{8}$
*316	$\frac{1}{2} \times \frac{3}{8} \times \frac{1}{4}$				

## CROSSES.—Continued.

No.		No.		No.	
*331	$\frac{3}{4} \times \frac{1}{2} \times \frac{1}{2}$	360	$1\frac{1}{4} \times \frac{3}{8}$	380	2 $\times \frac{3}{4}$
334	$\frac{3}{4} \times \frac{3}{8}$	361	$1\frac{1}{4} \times \frac{1}{2}$	381	2 $\times 1$
335	$\frac{3}{4} \times \frac{1}{2}$	362	$1\frac{1}{4} \times \frac{3}{4}$	382	2 $\times 1\frac{1}{4}$
336	$\frac{3}{4}$	363	$1\frac{1}{4} \times 1$	383	2 $\times 1\frac{1}{2}$
*340	1 $\times \frac{1}{2} \times \frac{3}{8}$	364	$1\frac{1}{4}$	384	2
*345	1 $\times \frac{3}{4} \times \frac{3}{8}$	*368	$1\frac{1}{2} \times 1\frac{1}{4} \times 1\frac{1}{4}$	388	$2\frac{1}{2} \times 1\frac{1}{2}$
*346	1 $\times \frac{3}{4} \times \frac{1}{2}$	*369	$1\frac{1}{2} \times \frac{3}{8}$	390	$2\frac{1}{2} \times 2$
*347	1 $\times \frac{3}{4} \times \frac{3}{4}$	370	$1\frac{1}{2} \times \frac{1}{2}$	391	$2\frac{1}{2}$
350	1 $\times \frac{3}{8}$	371	$1\frac{1}{2} \times \frac{3}{4}$	392	3 $\times 2$
351	1 $\times \frac{1}{2}$	372	$1\frac{1}{2} \times 1$	393	3 $\times 2\frac{1}{2}$
352	1 $\times \frac{3}{4}$	373	$1\frac{1}{2} \times 1\frac{1}{4}$	394	3
353	1	374	$1\frac{1}{2}$	396	$3\frac{1}{2}$
*357	$1\frac{1}{4} \times 1 \times \frac{3}{4}$	*379	2 $\times \frac{1}{2}$	397	4
*358	$1\frac{1}{4} \times 1 \times 1$				

## DROP ELBOWS.



Female.

No.	Drop.	No.	Drop.	No.	Drop.
402	$\frac{1}{4} \times \frac{1}{4}$	404	$\frac{3}{8} \times \frac{3}{8}$	407	$\frac{3}{4} \times \frac{1}{2}$
403	$\frac{3}{8} \times \frac{1}{4}$	406	$\frac{1}{2} \times \frac{1}{2}$	408	$\frac{3}{4} \times \frac{3}{4}$

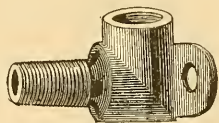


Male and Female.

411	$\frac{1}{8} \times \frac{3}{8}$	414	$\frac{3}{8} \times \frac{3}{8}$	415	$\frac{1}{2} \times \frac{3}{8}$
413	$\frac{1}{4} \times \frac{3}{8}$				



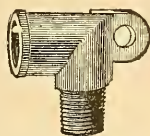
## DROP ELBOWS.—Continued.



With long Outlet piece.

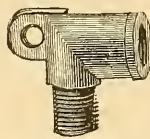
No. Drop.  
422  $\frac{3}{8} \times \frac{3}{8}$

No. Drop.  
423  $\frac{1}{4} \times \frac{3}{8}$



Flange right side.

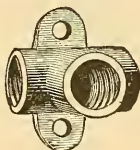
No. Drop.  
431  $\frac{1}{4} \times \frac{3}{8}$   
432  $\frac{3}{8} \times \frac{3}{8}$



Flange left side.

No. Drop.  
436  $\frac{1}{4} \times \frac{3}{8}$   
437  $\frac{3}{8} \times \frac{3}{8}$

## DROP TEES.

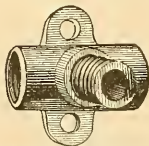


Female.

No. Drop.  
447  $\frac{3}{8} \times \frac{1}{4} \times \frac{1}{4}$   
449  $\frac{3}{8} \times \frac{3}{8} \times \frac{1}{4}$   
450  $\frac{3}{8} \times \frac{3}{8} \times \frac{3}{8}$   
451  $\frac{1}{2} \times \frac{3}{8} \times \frac{1}{4}$   
452  $\frac{1}{2} \times \frac{3}{8} \times \frac{3}{8}$   
453  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{4}$

No. Drop.  
454  $\frac{1}{2} \times \frac{1}{2} \times \frac{3}{8}$   
455  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$   
457  $\frac{3}{4} \times \frac{1}{2} \times \frac{1}{4}$   
458  $\frac{3}{4} \times \frac{1}{2} \times \frac{3}{8}$   
459  $\frac{3}{4} \times \frac{3}{4} \times \frac{1}{4}$   
460  $\frac{3}{4} \times \frac{3}{4} \times \frac{3}{8}$

No. Drop.  
461  $\frac{3}{4} \times \frac{3}{4} \times \frac{1}{2}$   
462  $\frac{3}{4} \times \frac{3}{4} \times \frac{3}{4}$   
463 I  $\times \frac{3}{4} \times \frac{3}{8}$   
466 I  $\times$  I  $\times \frac{3}{8}$   
467 I  $\times$  I  $\times \frac{1}{2}$



Male and Female.

471  $\frac{1}{4} \times \frac{1}{4} \times \frac{3}{8}$   
472  $\frac{3}{8} \times \frac{1}{4} \times \frac{3}{8}$   
473  $\frac{3}{8} \times \frac{3}{8} \times \frac{3}{8}$   
474  $\frac{1}{2} \times \frac{3}{8} \times \frac{3}{8}$

475  $\frac{1}{2} \times \frac{1}{2} \times \frac{3}{8}$   
476  $\frac{3}{4} \times \frac{1}{2} \times \frac{3}{8}$   
477  $\frac{3}{4} \times \frac{3}{4} \times \frac{3}{8}$

478 I  $\times \frac{3}{4} \times \frac{3}{8}$   
479 I  $\times$  I  $\times \frac{3}{8}$   
480  $\frac{3}{8} \times \frac{3}{8} \times \frac{3}{8}$

Drop  $2\frac{1}{2}$  inch  
long.

## CAPS.

No.	
486	$\frac{1}{4}$
487	$\frac{3}{8}$
488	$\frac{1}{2}$
489	$\frac{3}{4}$
490	1



No.	
491	$1\frac{1}{4}$
492	$1\frac{1}{2}$
493	2
494	$2\frac{1}{2}$

## PLUGS.

No.	
503	$\frac{1}{4}$
504	$\frac{3}{8}$
505	$\frac{1}{2}$
506	$\frac{3}{4}$



No.	
507	1
508	$1\frac{1}{4}$
509	$1\frac{1}{2}$
510	2

## REDUCING COUPLINGS.



No.	
519	$\frac{1}{4} \times \frac{3}{8}$
520	$\frac{3}{8} \times \frac{1}{2}$
521	$\frac{3}{8} \times \frac{1}{4}$
522	$\frac{1}{2} \times \frac{1}{4}$
523	$\frac{1}{2} \times \frac{3}{8}$
523 $\frac{1}{2}$	$\frac{3}{4} \times \frac{1}{4}$
524	$\frac{3}{4} \times \frac{3}{8}$
525	$\frac{3}{4} \times \frac{1}{2}$
526	1 $\times \frac{3}{8}$
527	1 $\times \frac{1}{2}$
528	1 $\times \frac{3}{4}$

No.	
529	$1\frac{1}{4} \times \frac{1}{2}$
530	$1\frac{1}{4} \times \frac{3}{4}$
531	$1\frac{1}{4} \times 1$
531 $\frac{1}{2}$	$1\frac{1}{2} \times \frac{1}{2}$
532	$1\frac{1}{2} \times \frac{3}{4}$
533	$1\frac{1}{2} \times 1$
534	$1\frac{1}{2} \times 1\frac{1}{4}$
535	2 $\times \frac{3}{4}$
536	2 $\times 1$
537	2 $\times 1\frac{1}{4}$

No.	
538	2 $\times 1\frac{1}{2}$
539	$2\frac{1}{2} \times 1$
540	$2\frac{1}{2} \times 1\frac{1}{4}$
541	$2\frac{1}{2} \times 1\frac{1}{2}$
542	$2\frac{1}{2} \times 2$
543	3 $\times 1$
544	3 $\times 1\frac{1}{4}$
545	3 $\times 1\frac{1}{2}$
546	3 $\times 2$
547	3 $\times 2\frac{1}{2}$

## EXTENSION PIECES.



Male and Female.

No. 561  $\frac{3}{8} \times \frac{3}{8}$

## COUPLINGS.

No.	
571	$\frac{1}{4}$
572	$\frac{3}{8}$
573	$\frac{1}{2}$
574	$\frac{3}{4}$



Right and Left.

No.	
575	1
576	$1\frac{1}{4}$
577	$1\frac{1}{2}$
578	2

587	$\frac{1}{8}$
588	$\frac{1}{4}$
589	$\frac{3}{8}$
590	$\frac{1}{2}$
591	$\frac{3}{4}$



Right Hand.

592	1
593	$1\frac{1}{4}$
594	$1\frac{1}{2}$
595	2

## LOCKNUTS.

No.	
601	$\frac{1}{4}$
602	$\frac{3}{8}$
603	$\frac{1}{2}$
604	$\frac{3}{4}$
605	1



No.	
606	$1\frac{1}{4}$
607	$1\frac{1}{2}$
608	2
609	$2\frac{1}{2}$
610	3

## STRAPS.

No.	
614	$\frac{1}{4}$
615	$\frac{3}{8}$
616	$\frac{1}{2}$



Tinned.

No.	
617	$\frac{3}{4}$
618	1

## WASTE NUTS.

No.	
625	$\frac{1}{4}$
626	$\frac{3}{8}$
627	$\frac{1}{2}$



Tinned.

No.	
628	$\frac{3}{4}$
629	1

633	$\frac{1}{4}$
-----	---------------



634	$\frac{3}{8}$
-----	---------------





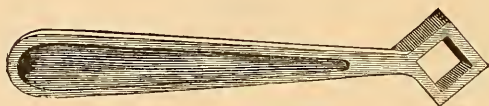
No.  
636  $\frac{3}{8}$   
637  $\frac{1}{2}$

## CHANDELIER HOOKS.



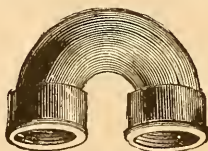
No.  
638  $\frac{3}{8}$   
639  $\frac{1}{2}$

## GAS COCK WRENCHES.



No. 645. 8 sizes, to fit Gas Cocks,  $\frac{1}{4}$  in. to 2 in.

## RETURN BENDS.



Open Pattern.

No.  
660  $\frac{1}{2}$   
661  $\frac{3}{4}$   
662 1  
663  $1\frac{1}{4}$

No.  
664  $1\frac{1}{2}$   
665 2  
665  $\frac{1}{2}$   $2\frac{1}{2}$



Close Pattern.

No.  
666  $\frac{1}{2}$   
667  $\frac{3}{4}$   
668 1

No.  
669  $1\frac{1}{4}$   
670  $1\frac{1}{2}$   
671 2

A FULL ASSORTMENT OF

## GALVANIZED AND ENAMELED FITTINGS,

From Steam Patterns (unless otherwise ordered), always in stock.

## PIPE CYPHER

ADOPTED BY

WALWORTH MANUFACTURING COMPANY,  
BOSTON, MASS.

For the convenience of their customers when ordering by Telegraph.

NUMBER OF FEET.		SIZE.	BLACK.	SIZE.	GALVANIZED.
100	Asia.	$\frac{1}{8}$	Alleghany.	$\frac{1}{4}$	Amazon.
200	Belgium.	$\frac{1}{4}$	Baltimore.	$\frac{3}{8}$	Bay.
300	Chili.	$\frac{3}{8}$	Camden.	$\frac{1}{2}$	Colorado.
400	Denmark.	$\frac{1}{2}$	Detroit.	$\frac{3}{4}$	Danube.
500	Egypt.	$\frac{3}{4}$	Erie.	1	Elbe.
600	France.	1	Fairmount.	$1\frac{1}{4}$	Firth.
700	Germany.	$1\frac{1}{4}$	Galena.	$1\frac{1}{2}$	Ganges.
800	Holland.	$1\frac{1}{2}$	Harrisburg.	2	Hudson.
900	Ireland.	2	Ithaca.	$2\frac{1}{2}$	Indus.
1,000	Japan.	$2\frac{1}{2}$	Jamestown.	3	Juniata.
2,000	Kentucky.	3	Kensington.	$3\frac{1}{2}$	Kanawha.
3,000	Liberia.	$3\frac{1}{2}$	Lancaster.	4	Lake.
4,000	Maine.	4	Macon.	5	Nile.
5,000	Nevada.	5	Newark.	6	Osage.
6,000	Ohio.	6	Oneida.	..	.....
7,000	Peru.	7	Paris.	..	.....
8,000	Russia.	8	Reading.	..	.....
9,000	Spain.	9	Salem.	..	.....
10,000	Texas.	10	Troy.	..	.....

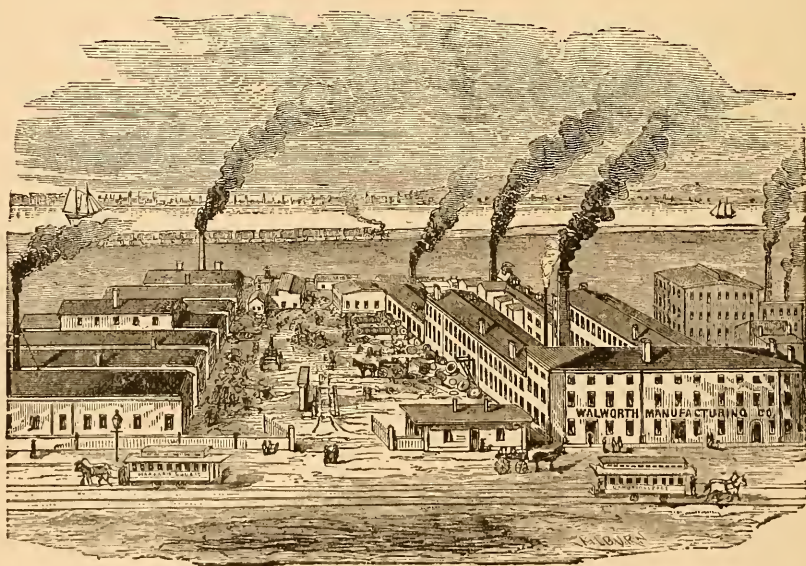
By this plan, mistakes by operators are prevented, and economy of words secured.

WORKS

OF THE

WALWORTH MANUFACTURING COMPANY,

CAMBRIDGEPORT, MASS.



CONSISTING OF

BRASS AND IRON FOUNDRIES,

AND MACHINE SHOPS.

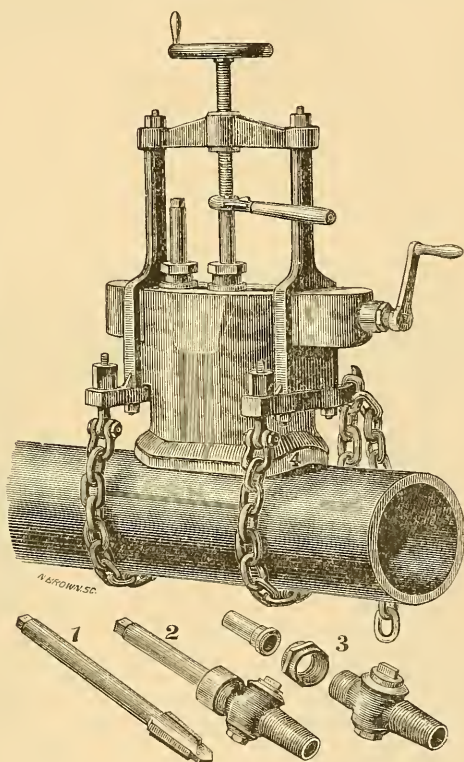


## MILLER'S TAPPING MACHINE.

(Patented Nov. 21, 1876.)

Fig. 626.

This Machine is for Tapping Street Mains, under pressure, or without shutting the Gas or Water off.  
Circulars giving particulars mailed upon application.



## SIZES:

No. 1, Machine for  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$  and  $\frac{3}{4}$  inch Cocks.  
 " 2, " "  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$  and 1 "  
 " 3, " "  $1\frac{1}{4}$ ,  $1\frac{1}{2}$  and 2 "

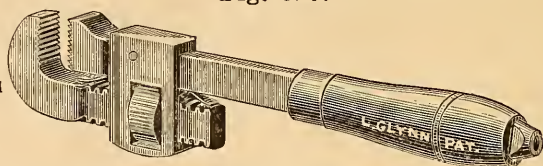
## PRICES:

No. 1, Machine with Drill, Tap and Rubbers, \$125.00  
 " 2, " " " " " 150.00  
 " 3, " " " " " 200.00

# GLYNN'S PATENT WRENCH.

Fig. 627.

Made of  
Black Diamond  
Cast Steel.



Pipe  
Is not Crushed  
By its Use.

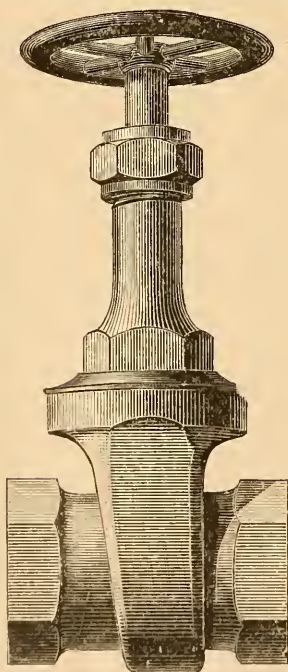
The *Fine Tooth* Wrench is especially adapted for Connecting Steam and Gas Pipes.  
The *Coarse Tooth* Wrench is better adapted for Bolts, Nuts, Studs, &c.

Length Open in Inches,	6	8	10	14	18	24	36
TAKES FROM . . .	$\frac{1}{8}$ in. wire to $\frac{1}{2}$ in. pipe.	$\frac{1}{8}$ in. wire to $\frac{3}{4}$ in. pipe.	$\frac{1}{8}$ in. wire to 1 in. pipe.	$\frac{3}{4}$ in. wire to 1 $\frac{1}{2}$ in. pipe.	$\frac{1}{4}$ in. wire to 2 in. pipe.	$\frac{1}{4}$ in. wire to 2 $\frac{1}{2}$ in. pipe.	$\frac{1}{2}$ in. pipe to 3 $\frac{1}{2}$ in. pipe.
PRICE, . . . . .	1.75	2.00	2.25	3.00	4.00	6.00	12.00

# THE JENKINS STRAIGHTWAY VALVE.

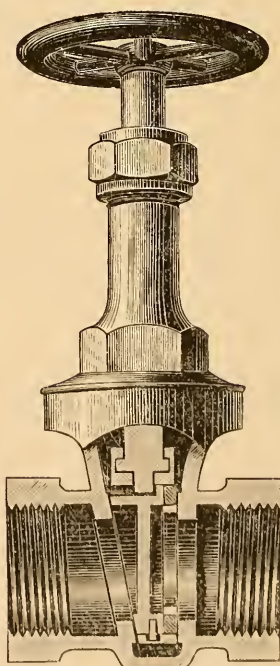
Fig. 628.

OUTSIDE VIEW.



Patented August 22, 1876.

INSIDE VIEW.



- These Valves have the following advantages over other Straightway Valves :
- 1st. — It does not depend on a metallic disc for a joint, but uses our compressible packing.
  - 2nd. — As the disc of packing wears, the inclined follower (or metal seat) keeps the disc to its seat, making a perfect joint.
  - 3rd. — Should the disc give out at any time it can be replaced at a small cost.
  - 4th. — It does not have to be removed from the pipes to repair.









## DATE DUE

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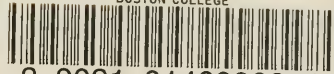
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